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I

The Commonwealth of Massachusetts

II REPORT

OF THE

Mass. SPECIAL COMMISSION TO STUDY AND INVESTIGATE CERTAIN PUBLIC HEALTH MATTERS.

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UNDER CHAPTER 78 OF THE RESOLVES OF 1948

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3. An Act relative to the Care and Treatment of Tuberculosis
4. An Act authorizing the Department of Public Health to erect a Building to house and maintain the Divisions and Bureaus of said Department, except the Division of Biologic Laboratories and the Field Units of the Department
5. An Act transferring the Division of Vital Statistics from the Secretary of State's Office to the Department of Public Health
6. An Act relative to the Organization of Union Health Departments
7. An Act providing Financial Assistance by the Commonwealth for Union Health Departments

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The Commonwealth of Massachusetts

RESOLVE OF AUTHORIZATION.

DECEMBER 1, 1948.

To the General Court of Massachusetts.

This commission was first authorized by chapter 73, Resolves of 1947, and was thereafter extended by chapter 78, Resolves of 1948, which provides as follows:

Resolved, That the unpaid special commission, established under chapter seventy-three of the resolves of nineteen hundred and forty-seven, is hereby revived and continued for the purposes specified in said chapter and for the purposes of extending the scope of their study in the investigations and studies relative to preventable diseases and to the establishment of full-time local health units throughout the commonwealth. Said commission may expend for clerical and other services and expenses such sums as may be appropriated therefor. The final report of said commission shall be filed with the clerk of the house of representatives on or before the first Wednesday of December in the current year.

Approved June 12, 1948.

The Commonwealth of Massachusetts

RECESS COMMISSION MEMBERS.

Appointed —

By the President of the Senate.

Sen. RICHARD H. LEE, Newton, *Chairman.*

By the Speaker of the House.

Rep. GEORGE W. DEAN, Oakham, *Vice-Chairman.*

Rep. JOSEPH D. RIVEST, Northampton.

Rep. FRED C. HARRINGTON, Everett.

By the Governor.

HENRY D. CHADWICK, M.D., Waltham, *former Commissioner, State Department of Public Health.*

L. JACKSON SMITH, M.D., Springfield, *Commissioner of Public Health, Springfield.*

CURTIS M. HILLIARD, Wellesley, *Secretary to the Commission and Supervisor, Board of Health, Wellesley and Weston.*

Consultant.

CHARLES F. WILINSKY, M.D., *Deputy Commissioner of Health, Boston.*

The Commonwealth of Massachusetts

DECEMBER 1, 1948.

To the General Court of Massachusetts.

In accordance with the authority delegated it by chapter 78, Resolves of 1948, the Special Commission to Study and Investigate Certain Public Health Matters has completed its survey and respectfully submits the attached report.

RICHARD H. LEE,

Chairman.

GEORGE W. DEAN,

Vice-Chairman.

CURTIS M. HILLIARD,

Secretary.

FRED C. HARRINGTON.

JOSEPH D. RIVEST.

HENRY D. CHADWICK, M.D.

L. JACKSON SMITH, M.D.

The Commonwealth of Massachusetts

ACKNOWLEDGMENTS.

The technical problems which were undertaken for study by the Commission were so highly specialized and of such scope that the judgment and the advice of numerous individuals trained and experienced in the various phases of public health were sought.

Four technical committees, listed below, were thus established. Three subcommittees were also organized. Their submitted reports have greatly assisted the Commission in its deliberations, and in many instances the statements and recommendations of these committees have been incorporated into the body of our report.

The Commission wishes to express its sincere appreciation for the enthusiasm, efforts, and sound judgment which the technical committee members have contributed to the preparation of this report.

Dr. Victoria Cass has acted as co-ordinator for the Commission. She has attended all meetings of the Commission and of the technical committees, has made records, and has kept the Commissioner informed of proceedings. Her assistance in the final work of preparing the report has been of inestimable value. The Commission wishes to record its gratitude and appreciation to Dr. Cass for her competent services.

The Commission also wishes to express its gratitude to Vlado A. Getting, Commissioner of Public Health, for his continued assistance; he has given unselfishly of his own time and has extended to us the facilities of the Department of Public Health throughout this study.

Technical Committee on Local Health.

- Hugh R. Leavell, M.D., Dr. P.H., *Chairman*, Professor of Public Health Practice, Harvard School of Public Health.
- Robert E. Archibald, M.D., M.P.H., Director, Local Health Administration, Massachusetts Department of Public Health.
- Robert L. DeNormandie, M.D., Chairman, Board of Health, Lincoln, Mass.
- Alfred L. Frechette, M.D., M.P.H., Health Officer, Brookline, Mass.
- Morris L. Lambie, Ph.D., L.H.D., Professor of Government, Graduate School of Public Administration, Harvard University, Cambridge, Mass.
- Ernest Morris, M.D., Health Officer, Newton, Mass.
- Keble Perine, Health Officer, Belmont, Mass.

Technical Committee on Preventable Diseases.

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- William L. Fleming, M.D., Associate Professor of Medicine, Boston University School of Medicine.
- Alfred Frechette, M.D., M.P.H., Health Officer, Brookline, Mass.
- John E. Gordon, M.D., Professor of Preventive Medicine and Epidemiology, Harvard School of Public Health.
- Charles C. Lund, M.D., Assistant Professor of Surgery, Harvard Medical School.
- Alton S. Pope, M.D., Dr.P.H., Deputy Commissioner, Massachusetts Department of Public Health.
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Technical Committee on Sanitation.

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- Leon A. Bradley, Ph.D., Head of Department of Bacteriology and Public Health, University of Massachusetts.
- William L. Campbell, LL.B., Professor of Food Technology, Massachusetts Institute of Technology.
- Carl S. Ferguson, Director, Division of Food and Drugs, Massachusetts Department of Public Health.
- Roger W. Macdonald, Town Manager, Middleborough, Mass.
- David Moxon, M.P.H., Agent, Board of Health, Framingham, Mass.
- Everett Thompson, Agent, Board of Health, Marblehead, Mass.

Arthur D. Weston, Chief Sanitary Engineer and Director of Division of Sanitary Engineering, Massachusetts Department of Public Health.

A. A. Robertson, Supervising Health District Sanitary Officer, Massachusetts Department of Public Health.

John B. Skinner, Director, Division of Occupational Hygiene, Massachusetts Department of Labor and Industries.

Constantin P. Yaglou, M.M.E., Professor of Industrial Hygiene, Harvard School of Public Health.

Technical Committee on Maternal and Child Health.

Warren R. Sisson, M.D., *Chairman*, President American Academy of Pediatrics.

Lendon Snedeker, M.D., *Co-Chairman*, Assistant Director, Children's Medical Center, Boston.

Stuart S. Stevenson, M.D., *Secretary*, Assistant Professor of Child Health, Harvard School of Public Health.

Miss Elizabeth Barry, R.N., Director, Visiting Nurses Association of Cambridge.

James M. Baty, M.D., Professor of Pediatrics, Tufts College Medical School.

Miss Alice B. Beal, Supervisor of Elementary Education, Massachusetts Department of Education.

James Chaffee, Superintendent of Schools, Sharon, Mass.

Allan Cunningham, M.D., Chief Bureau of Health Information, Massachusetts Department of Public Health.

Miss Ethel Cohen, Department Chief, Social Service, Beth Israel Hospital.

George E. Gardner, M.D., Executive Director, Judge Baker Guidance Center.

William T. Green, M.D., Clinical Professor of Orthopedic Surgery, Harvard Medical School.

Paul Losch, D.M.D., Chief Stomatologist, Children's Medical Center.

Mrs. Bertha Shapley Burke, Assistant Professor of Maternal Child Nutrition, Harvard School of Public Health.

Florence McKay, M.D., Director, Division Maternal and Child Health, Massachusetts Department of Public Health.

Duncan E. Reid, M.D., William Lambert Richardson Professor of Obstetrics, Harvard Medical School; Chief of Staff, Boston Lying-In Hospital.

William Wellock, D.M.D., Director, Division of Dental Health, Massachusetts Department of Public Health.

The Commonwealth of Massachusetts

REPORT OF THE SPECIAL COMMISSION TO STUDY AND INVESTIGATE CERTAIN PUBLIC HEALTH MATTERS.

HEALTH OF THE COMMONWEALTH — ITS GREATEST ASSET.

This is the third Commission to be authorized by legislative act during the last hundred years to study and report upon public health matters in the Commonwealth. The famous "Shattuck Report," the centennial of which was recently celebrated by the American Public Health Association, was submitted to the General Court and published in 1850. This amazing and monumental study has, over the century, been a guide for a public health philosophy and practice, and we find ourselves in this report repeating some of its recommendations not yet implemented. The Massachusetts State Board of Health, established in 1869 as the first such agency in the United States, was the most important single achievement growing out of the Shattuck Report.

The second Commission made its report in 1936. This study, while claiming nothing of the fame and influence of the earlier one, none-the-less has served as a guide in the development of legislation and public health practice during the last dozen years.

The accelerated pace of scientific discoveries, the changing concepts of what constitutes an adequate public health program, and the general increase in the rôle of government in public health work, prompted those interested in keeping Massachusetts abreast of the times

in this field of public service to recommend the creation of another Commission to review public health practices and policies in 1947. The present Commission differs in its composition from either of the previous ones. The Shattuck Commission consisted of three legislators, none technically trained, because there was no public health profession then. The 1936 Commission were all professional people, having no direct contact with the legislative body during their deliberations. The present Commission has representation from both groups to the mutual advantage of each, for the technical members pass upon the soundness of the recommendations from the scientific and administrative angle, while the legislative members pass judgment upon their legal and practical aspects from the viewpoint of the legislator. Furthermore, the proposed legislation has a "friend in court," and an informed spokesman who can interpret the purposes and resulting benefits of each proposal to the General Court.

Through the wisdom and generosity of the General Court, we have been permitted to extend our investigations for a second year to conclude studies commenced in 1947, and to extend the scope of our study. The extent and variety of matters considered would have been impossible for your Commission to have undertaken without the generous help of many volunteers. Four technical committees, named elsewhere, were appointed to assist us. The membership of these committees included the most expert people in their several professions, and the value of their services to the State can hardly be exaggerated. The Commission wishes to acknowledge the splendid work of the four technical committees. While it has adopted their reports, it has also taken liberties as necessary to correct them where duplications have occurred and to bring them into accord with the thinking of the Commission as to general policies. In many ways this is their collective report, and we express our gratitude and appreciation for their time and advice which can be paid for only in the satisfaction they may realize in having rendered a very valuable public service.

The Basis for Public Health.

A sound public health program depends upon (1) laws and rules which are in conformity with the most enlightened technical knowledge and administrative practices; (2) an organization to which authority may be delegated to implement and enforce such laws and rules, and so composed and operated as to insure an efficient and business-like service; (3) specially trained personnel to carry on the duties and responsibilities of diverse technical character within such an organization; (4) ample funds for the payment of salaries at a level which will attract and retain well-qualified personnel, and for other operating costs and equipment for a modern program; (5) an understanding and appreciative public who will support good public health work, and who will co-operate in maintaining it.

Public Health Legislation.

Public Health cannot be attained by merely enacting laws; but, on the other hand, we cannot have a progressive public health program without up-to-date laws. Modern health work subordinates the use of police power, and depends upon education and interpretation to gain its ends with the people. However, there are matters which must be backed up by the courts in order to protect the public from dangerous diseases, for example: the prevention of the pollution of public water supplies, the quarantine of certain epidemic diseases, or the licensing of establishments to conduct certain businesses require police powers. There are other matters that are directives which are designed for the promotion of health, as a law permitting the Department to establish rules and regulations for the health examination of school children. Then there are laws that are permissive, as those dealing with forms of government. The proposed law for the formation of local health units is an example.

The Commission is recommending twenty pieces of legislation each of which it believes is important and in the

interests of preventing diseases or promoting health. The titles of the bills follow; the bills themselves may be found in the Appendix.

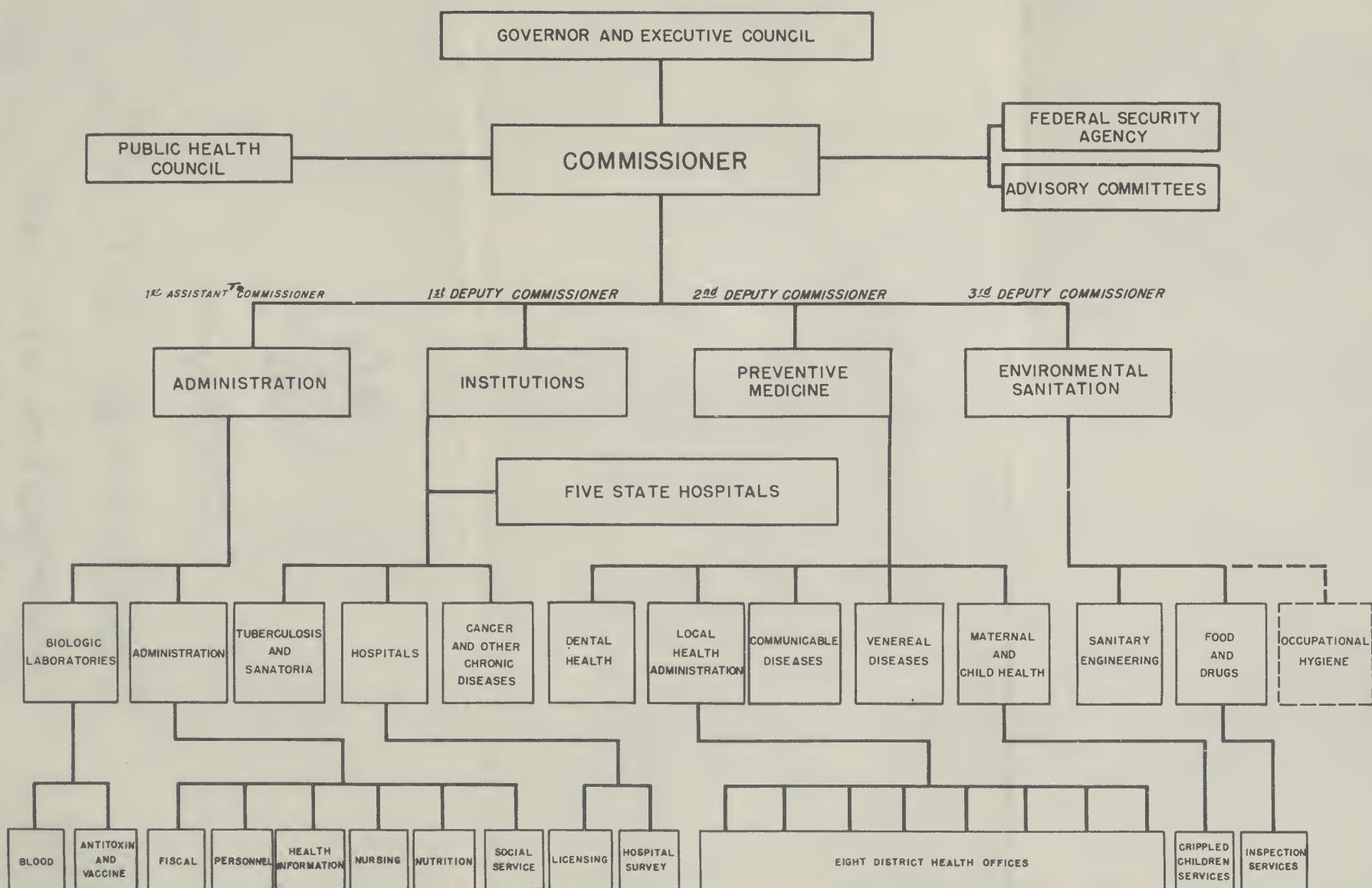
1. An Act further qualifying the Training and Experience of the Commissioner of Public Health.
2. An Act providing for the Construction by the Department of Public Health in the City of Boston, of a Hospital for the Care of Persons suffering from Chronic Diseases and the Purchase of Land Therefor.
3. An Act relative to the Care and Treatment of Tuberculosis.
4. An Act authorizing the Department of Public Health to erect a Building to house and maintain the Divisions and Bureaus of said Department except the Division of Biologic Laboratories and the Field Units of the Department.
5. An Act transferring the Division of Vital Statistics from the Secretary of State's Office to the Department of Public Health.
6. An Act relative to the Organization of Union Health Departments.
7. An Act providing Financial Assistance by the Commonwealth for Union Health Departments.
8. An Act relative to Milk Supplies.
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12. An Act relative to Sanitary Food.
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15. An Act to further regulate the Labeling of Chemical Substances Harmful to the Health of Industrial Workers.
16. An Act relative to the Service of Orders for Abatement of Nuisances.
17. An Act authorizing the Department of Public Health to adopt a Sanitary Code.
18. An Act providing for the Care of Infants prematurely born.
19. An Act prohibiting the Employment in Schools of Persons suffering from Tuberculosis in a Communicable Form and providing for Periodic Examinations of School Employees.
20. An Act further regulating Physical Examinations of School Children.

Organization of Public Health.

As with a business organization so also with public health, there must be a proper design for the division of

Figure 1

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH
ORGANIZATION CHART





work, and a delegation of responsibility. While the actual services are best rendered at the local level, and indeed are usually so allocated by statute, the functions and responsibilities of both the state and federal governments have been increasing over the years. Modern public health work has become more and more an inter-community problem, and certain matters cannot be dealt with locally.

The 1947 Recess Commission report recommended certain changes in the organization of the State Department of Public Health. It recommended that certain Divisions having related activities should be consolidated into sections and that there be appointed additional deputy commissioners to supervise the work of these several sections.

Many of the recommendations of the Commission have already been put into effect. The accompanying diagram (Fig. 1) shows the way in which the divisions have been grouped. The act authorizing the Commissioner of Public Health to appoint one or more deputy commissioners was passed by the General Court and three deputy commissioners have been appointed to head three of the sections. In addition, a first assistant to the Commissioner has been appointed who co-ordinates the work under the Divisions of Administration and Biologic Laboratories. The reorganization improves the efficiency of the Department by placing authority upon responsible heads who may channel information to, and receive directions from the Commissioner.

The Need for a Building to House the Department.

For over twenty-five years the Department has occupied its present quarters in the State House. During this period the work of the Department has more than tripled, and yet no additional space has been assigned to the Department in the State House. As a result, the Department of Public Health has been obliged to look for quarters elsewhere, and now rents space for those

divisions which cannot be housed within the State House, as follows:

Outside Rentals, Boston Area.

DIVISION AND BUREAUS.	Location.	Square Feet.	Yearly Rent.
Tuberculosis Clinic Office	6 Beacon Street	1,171	\$2,268 00
Communicable Diseases			
Hospital Licensing Bureau	8 Beacon Street	2,409	3,555 00
Hospital Construction and Survey			
Maternal and Child Health	73 Tremont Street	5,431	10,260 00
Cancer and other Chronic Diseases	100 Nashua Street	3,131	4,383 40
Occupational Hygiene	286 Congress Street	2,500	1,200 00 ¹
Division of Dental Health and North Metropolitan District Office.	227 Commonwealth Avenue.	3,011	4,000 00
Total		17,653	\$25,666 40
State House	Fifth floor	33,771	-
Outside State House		17,653	-
Total		51,424	-

¹ Department of Labor and Industries also pays \$1,845.48.

As a result of this dispersion, the Department has found it difficult to co-ordinate completely the work of the various Divisions and Bureaus which are not readily accessible. Greater efficiency in the operation of the Department of Public Health, and closer integration can be achieved only by the location of the Department's central offices in one building. In addition, it has not been possible for physicians, members of local boards of health, senators and representatives, to find personnel readily in the State Health Department whenever they wished to have conferences. Visitors from foreign countries and other States have likewise remarked upon the exceedingly crowded condition of the Department and the inaccessibility of the various offices in the several buildings.

The sum of \$25,666.40 is now being paid annually for rental of space not well adapted to the work of the Department. It represents 5 per cent of over \$500,000.

It should be noted that the space now occupied in

the State House is greatly overcrowded and does not represent the true needs of the Department for space accommodation.

The saving of over \$25,666.40 rent (which amount may be increased presently because of the expansion of the Department work), and the greater efficiency of the Department, if it could be under one roof, justifies the request for a building to accommodate the State Department of Public Health. (Appendix 4.)

Local Health Administration.

Much of the earlier Commission's Report, and Dr. Carl Buck's report to the Commission itself, dealt with the problem of local health administration. It is unquestionably the most important single need in the Commonwealth for the further advancement of the health of the people.

Massachusetts lags behind many other sections of the country in providing adequate local health services for its citizens, especially in small communities. This is not due to a lack of awareness on the part of the Department, or others interested in public health, of the need for improved local health services, but it is rather due to the cherished ideal of local autonomy that persists among the people. There are statutes already enacted which deal with the matter of local health organization, but none of the plans devised so far has been wholly successful or generally acceptable to the people.

The Technical Committee has attempted to preserve for the local boards of health the general responsibilities and duties now established by law as functions of existing boards. The Union Board of Health has the power to appoint the health officer, must approve budgets, adopt rules and regulations, fix fees, establish salary scales and personnel practices and perform all other duties of boards of health. They shall not, however, have any executive authority, this being delegated to the Director of Health who shall be the chief administrative officer. This will leave the desired control with a representative

board of health, the members of which are appointed by each city and town in the union. Technical details of administration will be left to proficiently trained individuals capable of carrying out these functions.

The responsibility that will be vested in the Director of Health demands that he shall be a person qualified by training and experience to conduct a modern public health program. Provision is made in the bill to safeguard this matter.

This union health bill (Appendix 6) will require in the first instance that cities and towns voluntarily pool their public health interests by combining into units of a certain minimum size. It is only in so doing that sufficient funds can be obtained to provide for the employment of trained personnel and to take care of the other costs of public health work. Furthermore, it is only possible to plan community health work when a sufficient number of people are served, thus permitting an organization of competent people under responsible leadership.

In the matter of financing, it is proposed to apportion the cost on the basis of population. The Committee on Local Health Units and the Commission concur that the proposed plan will succeed and expand rapidly only by receiving the incentive of a subsidy either from the state or the federal government, or both. The Commonwealth will be repaid many fold in terms of lives saved and sickness prevented, if it provides for the subsidizing of local health work. (Appendix 7.) By so doing, the objectives of adequate health services will be achieved.

Qualifications for the Commissioner of Public Health.

In 1947 the Commission's Report included an act further qualifying the training, experience, salary and appointment of the Commissioner of Public Health. This bill failed of enactment.

We are still strongly of the opinion that further definition of the qualifications of the Commissioner are important to safeguard this position against an incompetent appointee. We are therefore reintroducing this bill with

certain amendments (Appendix 1), notably by deleting that portion specifying a salary for the Commissioner and providing that the Governor shall select a Commissioner from a list of not less than three persons who are recommended to him by the Public Health Council. This council consists of six persons, one named each year by the Governor, to advise with the Commissioner. They are a non-political body whose first interest is efficient administration of the Department, and they are in a position to know who the available, qualified persons for this responsible position are at any given time.

Public Health Personnel.

Public health work is no longer a casual matter to be carried out by any available lay person, or even by a physician in private practice. It has developed into not one but several professions, each requiring special training and/or experience.

It is hard to exaggerate the importance of well-qualified personnel in health work, and yet we still find the citizens of most cities and towns satisfied to place the responsibility for protecting their lives and their health in the hands of incompetent people. Few realize, besides, what extensive police powers are enjoyed by health authorities. These powers, as well as policy making, have too often been placed in the hands of mediocre boards of health.

This situation may have arisen because health work originally consisted largely of nuisance abatement, or management of the occasional crisis of an epidemic. With preventive work as the key to successful modern public health work, and with a vast body of scientific knowledge, relating not only to prevention of disease, but also to improvement of health, only trained personnel are qualified to undertake such responsible work. To obtain such people it is necessary to recognize the importance of making the work attractive as to compensation, tenure of office and opportunity for advancement.

At the present time there is a serious shortage of pro-

fessional and technical personnel, and competition for those who are well trained is keen. The State, as well as cities, towns and local health units, must recognize this situation if they are to obtain people who will give proper leadership in the positions where direct services are rendered in public health work and are to obtain people who will serve competently. A scale of salaries must be established which will compare favorably with that offered by comparable federal positions, or by the neighboring States or cities, and unions in other States. The positions must be free from political interference both as regards appointment and the fulfilment of responsibilities. There must be assurance of tenure of office excepting for good and sufficient cause for termination. The usual provisions must be made for retirement, vacations and sickness benefits. Finally satisfactory work at all levels should receive recognition in the form of credit. Provisions for advancement in responsibility and salary must be made. Only by due attention to these matters can we attract qualified individuals to the profession of public health, and thereby secure for the people health benefits to which they are entitled.

Financing of Programs.

Public health work is neither expensive nor extravagant. Compared with other public protective services its requirements are modest. In budgeting, it can assure definite results in the protection of life or in health improvement for each dollar appropriated. A modest one dollar and a half per capita expenditure per year, it is estimated, may today purchase the minimum adequate health services. A larger expenditure is amply justified in terms of the benefits to community and personal health that may be purchased today.

We have noted that smaller communities must combine for public health work. As an inducement to carry out an adequate program, a state subsidy is desirable, or perhaps necessary. The principle of subsidy or grant is well established, and the Commission proposes and recommends legislation to this end.

Health Education.

In our preliminary report, and in Dr. Carl Buck's report to the Commission,¹ emphasis was placed upon the importance of health education of the people through a state-wide committee, to acquaint them with the objectives and methods of modern public health work, and to obtain their active co-operation.

Health education has a wider implication than such a general lay indoctrination, however, as it is a means to an end in much public health work. Every effective health worker whose service brings him in contact with the people has a health education mission. The sanitary inspector in carrying out his inspection services is not threatening court action, but is teaching the restaurant manager, or householder, how to improve his premises, and why he should do so. The public health nurse, the dental hygienist, the nutrition worker and others are essentially health educators. Maternal, child and adult hygiene depend very largely for their success upon the intelligent co-operation of the individual with the community plan. It also depends upon the individual's response to the instruction as reflected in better health habits.

Health, although placed first as an objective by school authorities, usually occupies a subordinate place and needs extension and improvement in most public schools in the State. Here through instruction, practice and example, the child should acquire better health habits which will serve him throughout life as a means to more abundant health. Health education has become a highly specialized field and the services of the health educator to plan and co-ordinate school programs should be made available either through the employment of such people by local school boards or by the consultative services of state counselors.

The Commission repeats its recommendation that the Governor be requested to appoint the chairman of a

¹ H. 1766 (1948), Report of the Special Commission to Study and Investigate Public Health Matters.

state-wide health education committee. It also believes that the health instruction in our schools should be improved and extended.

Vital Statistics.

The registration, classification, tabulation and compilation of vital facts are carried on in Massachusetts by the Secretary of State in the Division of Vital Statistics. Massachusetts is the only State in the Nation where these functions are not a division of the Department of Public Health.

The primary function of the registration system in Massachusetts is to obtain and preserve such documentary evidence concerning births and deaths as is necessary to protect the legal rights of individuals. The record blanks for births, deaths and marriages printed by the Division of Vital Statistics are supplied to city and town clerks classified as "registrars." There are 352 such registration areas in Massachusetts in whose offices original vital records are preserved as permanent records. The 351 cities and towns in Massachusetts account for all but one of the registration areas. The additional registration area is the State Infirmary and Hospital at Tewksbury.

REGISTRATION OF BIRTHS.

Local registrars are required to transmit to the Secretary of State, Division of Vital Statistics, copies of the original birth certificates by May 15th of the following year. In practice, however, many of the city and town clerks submit such reports monthly to the Division of Vital Statistics.

Inquiries concerning missing and incomplete information from physicians, registrars or hospital superintendents are made through the Secretary of State's office.

Stillborn certificates are checked against deaths, since in Massachusetts a birth and death certificate must be filed with every baby born dead after a period of gestation of not less than twenty weeks.

The town clerk or registrar files daily with the local board of health a list of all births reported to him showing, as to each, the date of birth, sex, color, family name, residence, ward and physician.

Copies of these certificates which are sent to the national office of Vital Statistics of the U. S. Public Health Service are made by special transcribers employed by the Secretary of State. These records are confidential and therefore cannot be used for purposes of taxation, registration or investigation. The national office of Vital Statistics collects, tabulates and analyzes statistics of births for the entire country, making comparisons with other States, and performs other nationwide services to promote complete and uniform registration.

REGISTRATION OF DEATHS.

The funeral director enters the personal and burial data on the death certificate which he then brings to the attending physician, or in case death was due to violence, to the medical examiner, who enters the cause-of-death data on the right-hand side of the certificate. The certificate is then taken to the board of health or health department or to the town clerk in towns where the town clerk acts as a member of the board of health and a burial permit is obtained.¹ A record of the vital facts is made in the board of health office and the original death certificate is transmitted to the city or town clerk for recording and filing. A copy is sent to the Secretary of State's office, Division of Vital Statistics, by the tenth of the following month. These certificates are checked for completeness. Requests for any missing information are directed to funeral directors, physicians, local registrars or hospitals. Upon completion these death certificates are coded, filed and indexed. Invariably the mortality statistics required for making copies for the National Office of Vital Statistics are not accurately coded until after inspection, study and compilation by the staff in the State Registrar's office.

¹ The law specifically states that "a satisfactory certificate of death, legibly written in durable black ink" must be filed before a burial permit is issued. (Chapter 114, G. L., amended.)

As with the birth certificates, copies of the death certificates are transmitted to the national office of Vital Statistics on blanks furnished by that office.

The registration of births and deaths in Massachusetts has a number of virtues and pitfalls, especially when so many of our towns are so small and are devoid of full-time medically trained health officers.

The local health officer can be most useful in making the death certificate complete and accurate, eliminating the need for the Division of Vital Statistics to query so many certificates by physicians, hospital directors, etc., by picking up slight errors or omissions in the statistical data filled in by the funeral director and the cause-of-death data certified by the attending physician or medical examiner.

The Division of Vital Statistics in Massachusetts was established in 1842. At that time there was no State Board of Public Health, and the most logical place to assign such a division seemed to be the Secretary of State's office. The Division has remained in this office now for over a century. What was logical one hundred years ago is not logical or satisfactory now.

Vital statistics are of supreme importance to the conduct of public health work. The current information of births and deaths is of immediate use in planning and executing the work of a department. Historically, they provide a measure of the success of the planning and work in the past, and serve as a guide in planning for the future program.

Since vital statistics data play such an important rôle in public health work, the Commission recommends that the Division of Vital Statistics be transferred from the office of the Secretary of State to the Department of Public Health. (Appendix 5.)

Tuberculosis.

Tuberculosis, although it has shown a steady decline from the beginning of the century, as indicated by the table below, none the less remains one of the prime causes

of sickness and death in the Commonwealth. Early case finding and prompt sanatorium care for advanced cases is still the key to the prevention of this disease. There has been a shift in the age incidence of tuberculosis from adolescence and early adult life to a high incidence in the population of forty-five years of age and over.

Massachusetts has three classes of sanatoria for tuberculosis patients residing in the State; namely, state, county and municipal hospitals. Originally it was entirely logical for these institutions to have developed under the different authorities. With the change in the incidence of the disease and the increase in the facilities that are demanded for the treatment of tuberculosis cases, and further, with the development of a section of the State Department dealing exclusively with hospitals and medical services, it seems logical to propose that all such institutions be placed under the direction of the State Department of Public Health. (Appendix 3.) This would result in economy and in making hospital beds more readily available to people residing in any part of the State. It will also make the uses to which the sanatoria may be put more flexible, and as tuberculosis declines the beds may be released for chronic diseased patients where the need will increase.

MASSACHUSETTS TUBERCULOSIS FACTS AND FIGURES.

TABLE 1.—*Tuberculosis Deaths and Death Rates Per 100,000.*

YEAR.	Total Number.	Rate.
1900	7,114	253.6
1910	6,056	179.2
1920	4,400	113.3
1930	2,734	64.3
1940	1,598	37.0
1947	1,576	34.4

TABLE 2.—*Facilities for Treatment of Tuberculosis in Massachusetts.¹*

	Number of Beds.	AS OF JANUARY 1, 1948.	
		Vacancies.	Waiting List.
Federal: 1 Veterans' administration hospital	651	146	137
4 State sanatoria	1,084	461	43
8 County sanatoria	1,332	439	60
8 Municipal sanatoria	1,158	370	66
Total for state, county and mu- nicipal sanatoria.	3,524	1,270	169

¹ Does not include 175 beds in 4 private non-profit institutions. Total available beds, including these, would amount to 4,350.

Approximately one third of the available beds are vacant with a waiting list of only 169. These patients could be admitted if the institutions were able to obtain sufficient employees to provide service. Apparently there are enough beds to care for all the patients who will accept sanatorium treatment. The Rutland State Sanatorium was opened fifty years ago and is obsolete in construction and equipment. This institution should be replaced by taking over one of the county sanatoria nearer Boston. If tuberculosis continues to decline as it has done (except during this last war period), there would be within a few years an adequate number of beds without the construction of more facilities.

The 20 state, county and municipal sanatoria vary in capacity from 35 to 575 patients. Approximately 2,400 tuberculosis patients in Massachusetts, now under treatment, are in these 20 different institutions which are controlled by 17 different boards.

To make the full use of available beds all the existing sanatoria should be placed under the State Department of Public Health.

Unified control would reduce costs of maintenance by making use of all available beds (and as the disease declines) the smaller institutions could be closed. In 1946 gross weekly per capita costs for maintenance varied from \$33 to \$77.

Many years ago Massachusetts placed all hospitals caring for mental disease under one board of control. This is a good precedent to follow with regard to tuberculosis. It could be brought about gradually by adopting a law similar to one recently put into effect in New York State.

To bring about the integration of the three groups of sanatoria now providing treatment for tuberculosis in the State, the Commission recommends the enactment of the legislation proposed in Appendix 3. This would repeal the settlement laws as far as they apply to persons having tuberculosis and permit the admission of such patients on the basis of residence. Thus the expense and delay incident to determining settlements would be avoided.

There would be two classes of patients:

I. State Resident:

Any person who has resided within the State for one year preceding the date of application for treatment.

Local Resident:

Any person who has acquired a state residence and has resided within a single county for at least six months preceding application for treatment.

Charges are based on residence instead of on settlement.

State charge:

(a) Without state residence.

(b) With state residence, but without local residence.

Local charge:

Any one who has acquired a local residence.

II. State Aid:

State aid is paid to county and city sanatoria in the amount of 50 per cent of cost of maintenance, but not exceeding \$3 per day.

State charges may receive treatment in county and city sanatoria at the expense of the State at a per diem rate that may be agreed upon.

Local charges when cared for in state sanatoria shall be billed back to the county of residence at \$3 per day.

A local charge admitted to a county or city institution who is a resident of another county can collect a per diem rate not exceeding cost of maintenance.

No patient shall be required to pay for treatment, and facilities for diagnosis shall be provided without cost.

Any patient may volunteer to pay cost of care but no public official shall request or require such payment.

TABLE 3.—Massachusetts Institutions for Tuberculosis, 1948.

INSTITUTION.	Maintenance Cost, 1946.	Gross per Capita per Week, 1946.	Net Capita per Week, 1946.	Bed Capacity, Jan. 1, 1948.	Vacant Beds, Jan. 1, 1948.	Males waiting.	Females waiting.	Waiting List, Jan. 1, 1948.
Federal: Veterans' Administration Hospital, Rutland Heights	\$1,648,500 00	\$67 06	\$67 06	631	146	136	1	137
State Institutions:								
Rutland Sanatorium	\$461,698 92	\$39 89	\$33 94	365	148	25	11	36
North Reading Sanatorium ¹	253,210 59	56 94	34 04	240	143	3	3	6
Lakeville Sanatorium ²	371,914 29	54 00	42 96	240	103	0	0	0
Westfield Sanatorium ³	510,432 42	57 75	49 38	189	67	0	1	1
	—	—	—	1,034	461	28	15	43
County Sanatoria:								
Barnstable County Sanatorium	\$131,910 00	\$43 33	—	70	0	8	12	20
Bristol County Tuberculosis Sanatorium	187,151 00	65 31	\$32 37	60	14	0	0	0
Essex Sanatorium	562,498 29	—	48 53	350	123	7	8	15
Hampshire County Sanatorium	—	48 30	44 73	50	11	0	0	0
Middlesex County Sanatorium	538,306 71	40 53	30 18	380	143	2	0	2
Norfolk County Sanatorium	280,048 31	49 07	38 08	154	30	11	7	18
Plymouth County Sanatorium	211,024 90	70 21	—	140	80	3	2	5
Worcester County Sanatorium	311,551 61	71 00	58 78	128	38	0	0	0
	—	—	—	1,332	439	31	20	60

¹ Tuberculosis and cancer.² Polio and orthopedic.³ Children.

TABLE 3.—Massachusetts Institutions for Tuberculosis, 1948—Concluded.

INSTITUTION.	Maintenance Cost, 1946.	Gross Capita per Week,	Net Capita per Week,	Bed Capacity, Jan. 1, 1948.	Vacant Beds, Jan. 1, 1948.	Males waiting.	Females waiting.	Waiting List, Jan. 1, 1948.
Municipal Sanatoria:								
Boston Sanatorium	• • •	\$810,213.41	\$42.42	\$38.15	573	166	27	10
Brookline Health Department Hospital	• •	39,533.36	52.15	—	55	40	0	0
Cambridge Sanatorium	• •	162,712.00	33.18	11.27	100	16	1	0
Fall River Tuberculosis Hospital	• •	128,360.57	32.41	—	105	37	0	0
Burbank Hospital, Tuberculosis Unit	• •	50,692.50	50.75	35.21	35	10	13	7
Lowell Isolation Hospital	• •	91,070.67	36.96	36.96	90	32	0	0
Springfield Health Department Tuberculosis Unit.	• •	134,722.05	53.62	39.20	50	10	5	3
Belmont Hospital Tuberculosis Division	• •	331,905.35	77.85	66.40	150	59	0	0
Sassaquin Sanatorium ¹	• • •	—	—	—	1,158	370	46	20
		\$175,421.98	\$33.64	\$32.02	104	6	0	0

¹ Sassaquin Sanatorium, a private institution, is included as it serves the city of New Bedford.

Summary.

	Beds.	Vacancies.	Waiting List, Jan. 1, 1948.
State institutions			
Municipal sanatoria	• • •	1,034	461
County sanatoria	• • •	1,332	439
Total	• • •	1,158	370
	3,524	1,270	169

Relocation and Construction of a Chronic Disease Hospital.

The Special Committee reporting in 1947 recommended the relocation of the site for a chronic disease hospital, provided for in chapter 511 of the Acts of 1946. This bill (House, No. 1766, 1948) was acted upon favorably by the House and was referred to the Ways and Means Committee. It was then reported in the House as House, No. 2393 — The Capital Outlay Bill. However, no appropriation was made to provide for the carrying out of the recommendations in the Commission's original bill.

The same arguments for a chronic disease hospital that were given in House, No. 1766 are still pertinent and are quoted below.

The Commission carefully reviewed the existing legislation pertaining to this hospital, and, as a result of this study together with information furnished it by a study made by D. A. Muncy and A. T. Row of the Harvard School of Regional Planning entitled "A Location Study on the Proposed State Chronic Disease Hospital" (a copy of which is on file in the Department of Public Health), and with further investigations and conferences with deans of medical schools, physicians and representatives of the Department of Public Health, determined that the present site at Stoneham was not suitable for the construction and efficient operation of a chronic disease hospital. It was found that, because of the nature of the Stoneham terrain, approximately \$350,000 would have to be expended for the blasting of stone prior to actual construction, and that the connections for water and sewage would require a further expenditure of \$50,000. Thus while the Department of Public Health is being granted a site supposedly free of charge, it would in actuality have to expend \$400,000 in order to make this site suitable.

Investigation further reveals that because of the remoteness of the site from either existing or planned extensions of the rapid transit system it would be necessary to build extensive housing facilities for personnel employed at the hospital; that it would require fifty to sixty minutes for a patient traveling by rapid transit from Park Street in Boston to reach the hospital, and that it would cost an extra fare for such transportation. Since many patients would be traveling from more distant places, a large amount of time would be expended in travel to and from the hospital (probably between three and four hours) which would discourage the average patient, or visitor, from visiting the out-patient department or seeing a relative in the hospital. It was further revealed that the time required to travel by

automobile from other hospitals in Boston, whose physicians would be wanted to serve on the staff of this chronic disease hospital, was between a half and three quarters of an hour. Thus, physicians would be driving approximately one to one and a half hours on each visit to the hospital, time which would be available for care of patients if the hospital were located near the medical centers.

As a result of its study and investigation the Commission concluded that the Department of Public Health, with the approval of the Governor and Council, should be authorized to purchase land in the city of Boston (Appendix 2), such land being convenient to the public and to the profession serving the public, the site to be preferably within half an hour traveling time by rapid transit from Park Street, and within the ten-cent fare zone, and in the general section of Boston where other hospitals are located so as to make possible consultations and medical services by the staffs of these hospitals to patients at the chronic disease hospital.

Such a site, moreover, would make it unnecessary to build extensive housing facilities, and the savings resulting from the accessibility of water supplies and sewerage, and of a more suitable terrain, together with the economies of operation, would more than compensate for any reasonable cost of the site. In such a location the hospital would be much more accessible to the public and would therefore, have a more active out-patient department. Thus patients who might otherwise require hospitalization could be taken care of more economically on an out-patient basis.

ENVIRONMENTAL SANITATION.

A great variety of matters in the realm of sanitation have been considered by the Commission and a number of recommendations have been made. There is further need for the control of milk and cream. During certain times of the year the local supply of milk from the sources where supervision by the state or local inspection services are carried out becomes inadequate to satisfy the needs, and a so-called "emergency milk" is brought in from States as far west as Minnesota to make up this deficiency. It is desirable that such milk be brought under more adequate supervision and inspection; and legislation to make this possible is recommended. (Appendix 8.)

Cream is not subject to the same control as milk. Much of it is brought in from out of State and it should be, in all respects, under the same regulations as milk. The Commission recommends that the present laws be

amended so as to secure for the citizens cream that is controlled and inspected in the same manner as milk. (Appendix 9.)

In recent years it has been learned that lobster and crabmeat are frequent sources of food infections. This is not surprising since the so-called "picking plants" where the meat from these crustacea is removed from the shell are frequently most unsanitary. The Commission recommends further supervision by the State Department of Public Health over lobster and crab meat "picking plants." (Appendix 11.)

Regulations regarding the slaughtering and inspection of animals to be used for other than human food does not now come under proper control. Since such products may be, and often are, used for human food, it is believed that they should be produced under the same standards of inspection and receive the same stamping to indicate that they have been passed by an authorized inspector as is required now for most products intended for human consumption. (Appendix 10.)

The licensing of eating establishments was originally a matter of approving a person or firm to conduct a certain type of business. Because much illness is now known to originate in foods served in public restaurants, or by caterers or other itinerant vendors of food, it is felt that greater responsibility should be taken by those officers concerned with protecting public health. Therefore, it is recommended that local eating and drinking establishments be licensed by local boards of health. (Appendix 12.) Those who conduct an inter-community business in the serving of food to the public, as with caterers, where the board of health has no control over the business, should be licensed by the State Department of Public Health. Legislation for this purpose is proposed. (Appendix 13.)

Other environmental matters to which the Commission has given attention are:

1. Regulation of the sale of poisons which now are required to be labeled only if they are in 100 per cent concentration. (Appendix 14.)

2. The more adequate reporting of occupational diseases.
3. The proper labeling of toxic chemical substances used in industry. (Appendix 15.)
4. The revision of the plumbing statutes.
5. The review of housing statutes.
6. The simplification of a method for the serving of notice on those guilty of maintaining a nuisance. (Appendix 16.)
7. Smoke nuisance abatement.

The ventilation requirements for schools and other public buildings has been studied in the light of changing concepts in the relation of the atmosphere to human welfare, and it is recommended that the existing rule, adopted in 1888, be rescinded, and that a general article, providing that the indoor air in such places shall conform in a general way with standards that will provide a comfortable environment free from objectionable odors and other impurities, be substituted.

Finally, the qualifications of the various grades of sanitarians has been reviewed. These workers constitute the second largest group engaged in public health work, and they undertake important official responsibilities which today go beyond the matter of enforcing a sanitary code, and require technical knowledge and experience. The Commission believes that a definition of the different grades and duties of sanitarians, and the general requirements of training and experience for them are essential to place this class of workers on a recognized professional status. This will provide communities with a standard for personnel and for service in this field, and will help to modernize community sanitary practices which still too often follow the traditions of the past.

Diseases and their Control.

It is axiomatic that public health work is concerned with the prevention of disease. The area in which the term "prevention" can really be applied has expanded greatly with the advancement of the scientific knowledge of the nature of infection, the way the body defends itself and acquires immunity, and with the discovery of the means by which immunity may be induced by inoculations.

Also the control of chronic diseases has become more reliable because of better means of early diagnosis and of cure and treatment.

The subject of preventable diseases covers rather diverse matters, collected in this report under one chapter. It has to do with such apparently unrelated matters as the control of rabies, the prevention of accidents, hospital facilities, and cancer control. Some of the measures involved have been tried, proven and well standardized, as in the matter of prevention of smallpox by vaccination. Other problems, as those dealing with rheumatic fever, or the public health approach to accident prevention are on the firing line, and may be expected to go through a progressive evolution leading to standardized control measures in the years to come.

Many of the ancient plagues of man in the form of epidemic diseases have become well nigh obsolete. In this Commonwealth smallpox has been absent for nearly two decades now. Typhoid fever has declined almost to the vanishing point. Diphtheria and scarlet fever, once the dread of parents of little children, are of minor importance as causes of death. Pneumonia is not preventable, but the modern methods of treating this illness have greatly lowered the death rate. All of these diseases attack chiefly children and are most fatal in the early years of life. Children, now spared these infections, live to ages when the degenerative diseases set in, and, from the standpoint of the size of the problem, the public health of the future will deal more and more with solving the problems of cancer, arthritis, diabetes and other diseases of this group. Knowledge now available places the degenerative diseases in the category of public health endeavor. Where diagnostic services and medical and hospital care are adequate a downward trend of some of these diseases is possible, resulting in the extension of the useful and happy life of afflicted patients. Health education is more important in dealing with this group of diseases than with the acute, self-limited infections, because it is necessary that the chronic patient, of his

own volition, seek medical aid. Health education, mentioned so many times in this report, is the solution to the prevention of chronic diseases.

BIOLOGIC LABORATORIES.

Since its pioneer undertaking in the production and distribution of diphtheria antitoxin in 1894, the state Biologic Laboratory has expanded so that today it produces a variety of vaccines, antitoxins, diagnostic agents and therapeutic drugs. In the field of research it has made outstanding contributions in the improvement of biologic products, and in ways and means of their manufacture. Its accomplishments are known far and wide, and it serves a useful purpose as a teaching center. Citizens of the Commonwealth are privileged to obtain what would otherwise be expensive products without cost, excepting for the insignificant portion of their tax dollar that goes into the support of this laboratory.

The Commission believes that the services rendered the citizens of the Commonwealth by the Biologic Laboratory is of great importance in providing a well-rounded program of public health. It recommends that greater liberality be shown in expanding this division, which, in proportion to the contribution it makes, is operating on a pittance. That which we discussed previously concerning personnel, professional qualifications and salaries, applies here.

Reference has been made elsewhere to the consolidation of the laboratories of the department into a division. To unite the laboratories and place them under one roof would result in definite economies and greater efficiency.

COMMUNICABLE DISEASE CONTROL.

While the direct work of communicable disease control is carried out by the local board of health, the state department none the less plays an important part. It is the source of information on the current prevalence of disease. Through the establishment of minimum regula-

tions for isolation and quarantine it sets the pattern for this work throughout the State. It recommends procedures in matters of immunization. It provides consultative service, and in case of emergency of an unusual outbreak of disease, state epidemiologists come to the aid of local communities to help them discover what the origin of infection is, and to set up the control measures.

The settlement laws fixing financial responsibility for the hospitalization of infectious cases in the community are ancient and outdated. The community responsible for hospitalization of a case of dangerous disease derives the benefit from such hospital care, and not the community where the patient or his guardian last resided for five consecutive years. It is recommended that a law be enacted which will place the financial responsibility upon the board of health which at the time exercises quarantine or other administrative supervision over the patient.

Rabies has been absent from dogs in the State for many years, and it would appear that the now rather prevalent practice of inoculating dogs against this disease has had definite prophylactic value. The Commission recommends the extension and encouragement of more general immunization of dogs against rabies.

The surest way by which certain diseases may be prevented is by prophylactic inoculation. The Commission believes it is the responsibility of boards of health to conduct adequate immunization programs against smallpox and diphtheria, and to encourage the extension of immunization practices against whooping cough and tetanus.

VENEREAL DISEASES.

Progress in the treatment of syphilis and gonorrhea, the two major venereal diseases in this State, shows tangible results in the decline in the number of cases reported, in the proportion of early cases of syphilis reported, as well as in the decline of congenital syphilis over the past ten years. Venereal disease still represents

important causes of illness. Because of the distressing symptoms not only of late syphilis, but especially in syphilis in innocent babies, this remains one of our major problems. Much progress has been made in the last few years in the treatment of both gonorrhea and syphilis with penicillin, including much more abbreviated courses of treatment.

There are, at the present time 25 venereal disease clinics with which the State Department of Health is co-operating. This service should be continued and expanded.

Due to the social relations involved in these two diseases, the reporting of syphilis and gonorrhea is far from complete. Furthermore, since the name of the patient is not given in those cases that are reported, duplication of cases reported cannot be detected and hence the epidemiological knowledge of the disease cannot be accurately determined. It is recommended that the legislation relative to reporting of venereal disease be so amended that patients may be differentiated and that the age, sex, race, marital status and address of each patient be given. Vigorous campaigns should be conducted to stimulate the reporting of venereal diseases from private physicians, clinics and hospitals. Also reports should be made, when known, as to the identity of the patients from whom such cases are acquired so that those in the infectious stages may be placed under supervision and given adequate treatment.

PREVENTION OF ACCIDENTS.

The public health approach to accidents is a new concept. Deaths from accidents today rank fourth as a cause of death which points up their importance. The number of non-fatal accidents is unknown, but we may be certain that if we had such knowledge at hand it would outrank every other cause of disability except the common cold. Accidents may occur anywhere. Those that occur on public highways due to motor vehicles are obviously more a concern of the police department

than of the board of health. Accidents in the home, however, which are the most numerous of all, can appropriately be attacked by boards of health and herein lies a challenge to discover ways and means of bringing about their reduction. It would seem again that this would be chiefly a problem of health education. We need more knowledge of the facts of when and where and under what circumstances accidents occur so that we may make intelligent and specific recommendations.

CANCER.

Cancer is the third leading cause of death. It attacks chiefly people over the age of forty-five, although it may occur at any age. Massachusetts was the first State to recognize cancer as a public health problem and to establish a department to provide special cancer hospital facilities. The name of the division engaged in this program has recently been changed to the Division of Cancer and Other Chronic Diseases — which broadens the scope of its work.

Much progress has been made in cancer control since the 1936 report. The state-aided cancer clinics have continued to render important services and through them much useful knowledge and statistical information has been acquired. The tumor diagnostic services have been greatly expanded; a new service providing for the detection of specific tumors by microscopic examination of vaginal smears has been introduced; education both for physicians and lay education has been expanded.

The successful attack on cancer depends upon early diagnosis when a large proportion of such cases may respond to surgery or other methods of treatment. Time is most important and the individual patient on the one hand must be made aware of the importance of seeking medical advice when any of the suspicious symptoms develop; on the other hand physicians must be made constantly alert to the possibility that any patient entering his office may be an incipient cancer case. This spells

out the need for state aid in cancer clinics and in their effective and enterprising program in education.

The Commission believes that the chronic diseases present the most important and challenging problems of public health today and recommends the continuing support of the Cancer and Chronic Disease Program. It further recommends the appropriation of adequate funds not only to continue but to expand the several services which have been found effective in the prevention of this group of diseases.

STATE SANITARY CODE.

The Commission believes that the State Department of Public Health should be empowered by the General Court to adopt a sanitary code which would set up the minimum rules and regulations to be effective in all local communities. There are many matters affecting the public health which today can only be advanced by the enactment of laws by the General Court, but which, as a matter of fact, are too detailed and not of a sufficient general nature to justify the deliberations of the General Court. Public health practices would advance more rapidly if this hampering influence could be removed, so that the General Court would pass upon matters of general policy, leaving the implementation of public health work to the State Department through the constant revision of the Sanitary Code. The Commission recommends an act authorizing the Department of Public Health to adopt a Sanitary Code. (Appendix 17.)

Maternal and Child Health.

Childbirth is fraught with certain hazards for the mother. These hazards may be minimized by proper medical, nursing and prenatal care, and by obstetrical services of a qualified physician in hospitals where adequate obstetrical care may be given. There has been a steady decline in maternal deaths in Massachusetts as the percentage of hospital deliveries has increased. Every

effort should be made through local boards of health to provide prenatal care by their public health nurses acting under the supervision of the attending physician. Hospital facilities for obstetrical care should be made available, and should be used for all cases.

NEONATAL AND INFANT HYGIENE.

At the present time there is often a lag between the occurrence of birth and the reporting of the birth to the community of the residence of the mother. If public health nursing services are to be extended to newborn babies and their mothers, it is of the greatest importance that the board of health responsible for this service be notified at once. The Commission recommends the study of present procedures so as to expedite the reporting of births.

The neonatal death rate has been consistently improved over the last decade or more, but it is still a fact that the first days and weeks of life are the most hazardous for the individual. Prematurity is indirectly one of the most important contributory causes of death, and premature births should be made immediately reportable. The necessary hospital facilities to take care of premature births should be a requisite for hospitals having maternity wards.

CHILD HEALTH.

The infant becomes a child in a statistical sense when he reaches one year of age. This rapidly growing child must make all the physical and emotional adjustments to his environment and to society in a short span of years. It is during this period that he has the greatest opportunity to acquire infectious diseases from his playmates and is then most susceptible to these diseases. His body is in a plastic state, readily acquiring good or bad habits, and responding to good or bad nutrition, and to good or bad environment. His emotional life is likewise in the formative stage, and in this period it may be determined

whether the child will be a well-adjusted individual, or one who rebels against his neighbors and society.

Every child, especially through the preschool years, should have medical supervision and care. This may be rendered by a private physician, or in well child conferences. It is the responsibility of the State and the local boards of health to see that children have proper medical care.

The well child conference is a definite responsibility of the local board of health. It is a service to children under five years of age and provides routine physical check-up, as well as advice and guidance to the mother in such matters as the nutrition of the child. It provides an opportunity for the immunization of the child at the most strategic time. Unfortunately this immunization is frequently neglected by the Conference.

A recent survey has revealed that many well child conferences in Massachusetts are inadequate in the services offered, and are not well conducted. The Commission recommends that both the State and local health organizations make efforts to improve this condition. It further recommends the expansion of the present program of post-graduate education of doctors now conducted jointly by the department and the Massachusetts Medical Society. There is a special need for the extension of better health services to children in rural health areas. This should be a matter of concern to the Massachusetts Department of Public Health.

CRIPPLED CHILDREN.

The term "crippled children" is understood to include those children under twenty-one years of age who are suffering from residual paralysis of poliomyelitis, cerebro-spastic palsy, bone and joint tuberculosis, rheumatic disease, arthritis, congenital defects, and such other conditions as may lead to or have produced crippling and which may be treated advantageously. It also includes children who require operations because of burns and accidents leading to crippling or because of

congenital defects such as harelip, cleft palate, and so forth. Other chronic conditions which are crippling in nature are still to be included in this category.

It is the responsibility of the community and especially of the Department of Public Health to provide facilities for the finding of these children, and to further provide for their care. The primary object of such medical care is to alleviate the mental and physical distress caused by their affliction, and to bring about as complete rehabilitation of the patients as is possible in order that they may become useful citizens.

The Commission feels that it is desirable to provide special state hospitals for the care of crippled children as well as to use the facilities in existing hospitals which should be expanded and improved. If this is to be done, adequate financial assistance must be obtained from the State to provide at least for the cost of care of the patients. Special clinics for diseases such as epilepsy should be encouraged. Physicians, who gladly staff orthopedic clinics, at nominal fees, should be compensated adequately when surgery, or other special medical services are required.

Teaching units for physicians are necessary, and these should be provided with aid from either state or federal funds. In general, the advancement of the cause of the crippled child depends upon the wise expansion of the present program with more liberal financial support.

SCHOOL HEALTH.

There should be continuity of services for children from infancy through the school years. A more integrated program should be worked out to provide for this.

The school health program should include a wholesome environment within the school, proper health supervision of the school child by school physicians and properly qualified trained nurses; appropriate facilities for play and for physical education under supervision, and for an integrated program of health education in the classroom.

The Commission wishes to endorse the co-ordinating work that has been carried out by the Massachusetts School Council, consisting of a Department of Education, Department of Public Health and the Department of Mental Health.

The present law requires that each school child shall have a physical examination by a physician every year. Annual inspections are unnecessary. Thorough medical examination at less frequent intervals would reveal more defects and make possible concentration upon those children most in need of attention.

It is recommended that legislation be enacted to permit the Department of Public Health to set up standards for the physical examination of school children after consultation with the Department of Education and the medical profession.

In order to protect children from exposure to tuberculosis, the Commission recommends special legislation requiring that all school personnel be required to have an X-ray examination of the chest at the time of employment and at such intervals as may be recommended by the Department of Public Health.

There are no professional standards required of school nurses at the present time. The Commission recommends that an act be adopted setting up minimum standards of training and experience for school nurses.

There are no adequate standards established for preschool nurseries. Day nurseries are now licensed by local boards of health, but there are not adequate regulations for these. It is recommended that boards of health adopt regulations to apply to such schools.

Public Health Nursing.

The public health nurse is indispensable in the conduct of a modern health program in which she performs a great number of services which are commonly of a personal nature. It is essential that she have special preparation beyond her hospital training for her work.

Massachusetts is probably as well staffed by public

health nurses as any State in the Union. However, the distribution of nurses throughout the Commonwealth is quite unequal. The development of district health units will bring about a more equitable distribution of services, and will make it possible to build up a staff of nurses who will work under a competent supervisor. While it has been noted that the number of nurses employed in Massachusetts communities is fairly ample, it is distressing on the other hand to learn that a considerable proportion of these nurses have not had suitable training for community work. Every facility should be made available and encouragement given to provide nurses in service with opportunities to obtain further training. Standards should be established for the employment of public health nurses in the future.

Nurses are now frequently employed by two or more agencies in the same community—namely, by boards of health, by the school department and by visiting nursing associations. This frequently leads to duplication of effort and to a badly co-ordinated program. It is desirable that steps be taken to place school nursing under the supervision of local boards of health where full time health services are performed and that the ultimate goal should be to have more generalized nursing when and where this becomes practicable.

Nutrition Services.

It has been proved that the proper nourishment of the mother during gestation has a definite and favorable effect upon her health as well as that of the infant. Lower neonatal mortality rates have resulted from such improved nutrition. We believe that every possible means should be used to provide the expectant mother with sound information regarding proper dietary habits. This may be accomplished through preschool clinics properly staffed, or by means of home visits by the public nurse under the supervision of the physician in charge of the case.

Infant nutrition is also of greatest importance as is that

of the preschool and school child, and again it is the responsibility of the local boards of health to provide through the well child conferences or other means, this essential knowledge to both mothers and children. The school cafeteria should function as a nutrition education center and not simply as a place where warm, nourishing meals may be obtained during the lunch hour.

The State Department of Public Health should provide demonstrations at preschool and school child conferences, and give consultation services not only for children, but also to industry, hospitals and other institutions where large numbers are regularly fed.

Social Service.

The tremendous increase in the incidence of illness requires new emphasis on the social factors of diseases. Social service must be developed to meet these new needs. Chronic or crippling diseases may seriously influence the wage-earning capacity of an individual, and jeopardize the educational and physical health of the family. There is great need, therefore, for the expansion of social services which are needed to assist in finding community facilities to meet specific needs of patients and to interpret home conditions to physicians and agencies who assume responsibility for the care of patients. Often if proper home conditions are developed, certain patients may be treated in an out-patient basis, releasing beds for patients more urgently in need of hospital care.

Conclusion.

The Commission has reviewed the developments in the field of public health that have taken place since the last study and report was made in 1936. Scientific discoveries and the evolution of administrative practices have occurred which more than justify this present study if Massachusetts is to maintain her position of leadership in providing the people with the best modern public health services. The Department of Public Health has [been

alert to changes, and has expanded and provided new services to keep abreast of the times, but there still remains some essential or desirable developments that can be obtained only by the adoption of new legislation.

This introductory chapter attempts to survey the major fields of public health activities and to point up the changes in procedures and practices calculated to give the people up-to-date service both at the state and local levels. In addition to the twenty pieces of legislation proposed, many recommendations are made which may be implemented by local boards of health, by professional organizations, or even by lay people.

If health is our greatest asset, let us see to it that no important matter which will advance it is neglected. Public opinion, when it is wisely directed, is the most potent influence in advancing the cause of good and progressive government. While this report is addressed to the General Court of the Commonwealth, it is sincerely hoped that the proposals made herein may reach the people.

Respectfully submitted,

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Chairman.

GEORGE W. DEAN,

Vice-Chairman.

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LOCAL HEALTH UNITS FOR MASSACHUSETTS.**Consideration of the Problem.**

Existing local health units in Massachusetts, with a few outstanding exceptions, do not meet accepted modern standards. The problem was considered by the Commission on Public Health created by the 1947 General Court and has been discussed in the report of the Commission published in December, 1947.

Local health services in America developed long before state and federal activities in the health field became important. As epidemics, nuisances and other serious local problems appeared, health departments were set up to cope with them, at first on a temporary basis and later as permanent organizations. Boston, in 1799, established one of the first local health departments in the country. It was not until 1869 that Massachusetts established the first State Health Department. In sections of the country where the county is a more important governmental unit than in New England, full-time county health departments began to develop following the first one in Jefferson County, Kentucky, in 1908.

The Rockefeller Foundation with its hookworm control campaign, and the U. S. Public Service with its studies on typhoid fever, were the most important agencies active in the early promotion of full-time local health service in this country. In 1915, there were only fourteen full-time county units. By 1934, the number had increased to five hundred and forty. Following the passage of the Social Security Act in 1935, and the availability of federal funds to provide subsidies, there was a remarkable development of full-time units so that in 1941, approximately two thirds of the population of the country was provided with service of this type.

Dr. Haven Emerson, chairman of the American Public Health Association Sub-Committee on Local Health Units, has made most important contributions to thinking in this field of public health development. Dr. Emerson's committee advocates the idea of a balanced health team

with full-time, well-trained public health personnel, receiving adequate salaries. The minimum membership of such a team would be a health officer, public health nurses (one to each 5,000 population), sanitary officers (one to each 25,000 population; recently modified to one to 15,000), and clerks (one to each 15,000 population). Experience has shown that a minimum population of approximately 50,000 is necessary to provide local funds adequate to support the basic health services provided by such a team. With this idea the committee tentatively divided the country into approximately 1,200 local health units which would meet these criteria. Plans for individual States were submitted to the States for revisions. After these revisions had been compiled, a meeting of state and territorial health officers in Ann Arbor, Michigan, in the fall of 1946 adopted the proposals without essential change in the total number of units for the whole country. In 1947, a meeting of some 60 to 70 representatives of National Organizations of all types in Princeton, New Jersey, also endorsed the plan. Within the past few months the National Health Council has assumed responsibility for spearheading the campaign to promote the further development of full-time local health units.

UNDERLYING PRINCIPLES.

The general principles underlying the formation of adequate full-time local health units are as follows:

1. *The Local Health Unit, properly constituted and staffed, is the Most Efficient Organization for rendering Direct Service to the People.*

There is local responsibility for appointing the health officer, and for policy formation. Opportunities for arousing local interest, initiative and enthusiasm are greater with this type of organization than under any other circumstances. Employees of the health department do their work directly under the eyes of their neighbors.

Attempts to provide direct services by state health

departments through the use of state operated district offices or by other means, have proven unsatisfactory and all progressive state health officers regard this expedient as a temporary measure to be replaced as soon as possible by effective local units. Under the system of state operation local participation is inevitably curtailed and state domination is fostered. Generally, the state services provided have been inadequate, and the state personnel has been lacking in sufficient legal authority and support of local law enforcement agencies to do good work.

Primary state functions should be to provide supervision, consultation and aid in financing, rather than direct service.

2. All Essential Units of a Balanced Public Health Team must work together as an Administrative Unit for Maximum Efficiency.

At least four types of personnel are required to make up the minimum team — health officer, public health nurse, sanitary officer and clerk. It is not economical to employ a health officer to supervise a single nurse, sanitary officer and clerk; his training and competence would be largely wasted under such circumstances. Experience has shown that with a health officer there should be approximately ten public health nurses (one of supervisory grade), a public health engineer and one or more sanitary inspectors or sanitarians, and three clerks as the minimum staff for the most effective organization. All must work together as an integrated administrative unit for best results.

A single public health nurse working alone without proper supervision and without health officer, sanitary and clerical team-mates cannot by herself do even the work which would be expected of each public health nurse working in a properly balanced unit.

3. *The Area for which the Local Health Unit is responsible must have Sufficient Wealth and Population to employ a Balanced Health Team and to keep it busy on a Full-Time Basis.*

There must be sufficient taxable wealth in the area to provide adequate salaries to attract and keep properly trained personnel. The area should plan to maintain most of the basic public health service with local tax funds, and it is necessary to have a population of at least 35,000 to 50,000 to produce sufficient local revenue to employ the minimum balanced team. Administrative public health work and private practice are incompatible, and only a full-time staff should be employed in the key positions referred to above. Part-time workers may be employed to advantage as school physicians and in certain other capacities.

In very poor areas it may be impossible to finance the basic services without subsidy; very wealthy areas may be able to provide sufficient funds to employ a balanced team with a somewhat smaller population than the average; and in areas where public health problems are especially acute or where the population is abnormally sparse a smaller population total may be desirable.

4. *All Basic Public Health Services should be available in the Area.*

The basic services are defined as follows:¹

1. Vital statistics, or the recording, tabulation, interpretation and publication of the essential facts of births, deaths and reportable diseases.
2. Control of communicable diseases, including tuberculosis, the venereal diseases, malaria and hookworm disease (in areas where such diseases constitute public health problems).
3. Environmental sanitation, including supervision of milk and milk products. Food processing and public eating places, and maintenance of sanitary conditions of employment.
4. Public health laboratory services.
5. Hygiene of maternity, infancy and childhood, including supervision of the health of the school child.

¹ Emerson, H. and Luginbuhl, M.: Local Health Units for the Nation. New York Commonwealth Fund. 1945.

6. Health education of the general public so far as not covered by the functions of the departments of education.
7. Chronic diseases — an educational and diagnostic program for the prevention and arrest and amelioration of chronic diseases and their complications. (Added to basic activities by section on Local Health Units at National Health Assembly, May, 1948.)

All the services listed above should be available readily to the community; some may be provided by community agencies other than the health department; others (such as certain laboratory services) can be provided advantageously by the state health department.

5. Subsidies from State and Federal Funds should be available to Local Units.

Such subsidies are needed to provide incentive for the formation of proper local health units in many cases. Subsidies are also needed to provide certain services for which local funds are insufficient; to set up training facilities for personnel; and for research.

6. Necessary Legal Authority must be provided so the Local Unit can function effectively.

The necessary legal authority must be provided so that the local health unit will have at least the following powers:

1. To organize with responsibility for the health of an area of sufficient population and wealth.
2. To appoint a health officer and to authorize appointment of other personnel, under a merit system.
3. To appoint a board of health, unless the health officer is given the authority ordinarily conferred on boards of health.
4. To issue rules and regulations for the health of the area.
5. To fix salaries, provide for retirement plan, meet payrolls and make necessary purchases.

Of the three hundred and fifty-one cities and towns in Massachusetts, only about fifty are provided with full-time health officers and only about nine of these are medically trained. The Special Commission on Public

Health¹ has stated, "The expenditure of a relatively small amount of money for local health departments would, to a large extent, bring about a substantial saving of both lives and money. Experiences in Massachusetts and throughout the nation have convinced the Commission that a definite program for the formation of local health departments must be developed, including legislation providing for their formation, their financial support and their establishment at as early a date as possible."

THE GREATEST NEEDS.

The Commission has also pointed out that the greatest needs of the formation of local health departments in Massachusetts at the present time are the following:

1. A sound state-wide program of education and health information which will bring about the universal understanding of the need and value of full-time health services.
2. Reinforcement of a strong state department of public health since such a department must offer the leadership in the development of local health services.
3. Basic legislation permitting and facilitating establishment of full-time local health departments.
4. A plan for state financial assistance for the maintenance of full-time local health departments.
5. Adequate staff of well-trained full-time public health personnel.
6. Good salaries to attract qualified personnel.
7. The development of a method for measuring the accomplishments and needs of a community in the development of a public health program.
8. The development of field training centers equipped to provide orientation for new state and local health department personnel.

STATE-WIDE HEALTH COMMITTEE.

The Commission has also recommended that the Massachusetts Central Health Council request His Ex-

¹ House No. 1766 (1948). Report of the Special Commission to Study and Investigate Certain Public Health Matters.

cellency the Governor, to appoint a chairman and co-chairman of a state-wide health committee. This committee should be composed of civic leaders and selected on a non-partisan basis with authority to select a small executive committee which would in turn elect a permanent chairman and co-chairman and other officials. Such a committee would presumably further organize by the appointment of additional members and perhaps would form local branches. It was recommended that this state-wide health committee be established to sponsor and carry on an educational program to bring about an understanding of the need for, and value of, a full-time adequately staffed local health department. This understanding would, in turn, result in the formulation of legislation permitting and facilitating the development of full-time health departments. It was further recommended that the Department of Public Health assist this committee by providing an executive secretary from its staff.

The Technical Committee on Local Health Units recommends strongly that this state-wide health committee be appointed at the earliest possible time and that it be supplied with funds necessary to conduct a vigorous and extensive educational campaign.

PREVIOUS EXPERIENCES.

The Technical Committee has studied the experience with full-time local health units in Massachusetts and in other parts of the country, as well as numerous plans suggested for the further development of such units in the Commonwealth. Certain proposals which have operated effectively elsewhere would probably not function as successfully here, largely because the county is relatively undeveloped as a local governmental unit in New England. However, the individual town is not, in the very great majority of cases, a feasible unit for the establishment of good local health departments in Massachusetts because the great majority of towns do not have sufficient area and population to allow for economic and

efficient administration of a balanced full-time local health department.

Experiments with unions of towns to form local health units have been carried on in Massachusetts, and there is legislation at present permitting such unions. With financial assistance of the Commonwealth Fund two such unions were established in 1931, one in Berkshire County and the other in the Nashoba Valley. The latter unit has continued even though several of the towns originally included have dropped out, and is now taking on renewed vigor since a medical health officer was appointed a few months ago. An important difficulty experienced with each of these unions has been the ease with which constituent towns could drop out of the union on very short notice. As a result, the health officer of such a union must spend a large proportion of his time in efforts to maintain the health union intact rather than in devoting himself to developing a productive health service program which could be expected to show significant results only over a period of years.

Some States have attempted to provide local health services as a direct state service by a form of district administration, and to some extent this is now true of the eight district offices currently maintained by the Massachusetts Department of Public Health, though most of the services provided by the present districts are advisory to local health units. There are a number of reasons why it is unwise to expand direct services by the State, the principal ones being that such a method does away with local initiative and responsibility to a large degree.

FINANCIAL SUBSIDY.

The Committee is convinced that financial subsidy to local health units by the Massachusetts Department of Public Health (using state as well as federal funds) is essential to the development and maintenance of adequate local health service. The taxing power of local government is tied so closely to real property and is so limited that it is necessary to resort to the broader taxation base

enjoyed by state and federal government. Forty-four States now subsidize local health services.

PLAN FOR EXTENSION AND DEVELOPMENT OF LOCAL HEALTH SERVICES
IN MASSACHUSETTS.

DEFINITIONS:

As used herein the following words are defined as indicated:

“Department” means the Massachusetts Department of Public Health.

“Board” means the union boards of health as established under provisions of this act.

“Health Officer” means the Director of Health appointed by the Union Board of Health.

“Union” means the unions established with approval of the Massachusetts Department of Public Health, including such cities and towns as are to be administered as parts of the union.

BASIS FOR FORMATION.

Approved local health unions should be formed in one or more of the following ways:

1. *On the basis of county boundaries.*

(a) *Complete County Union.* — In the western part of the State, counties are of suitable size and population for the formation of unions on county lines.

(b) *Multi-County Union.* — In the Cape region, counties are small and sparsely populated so that more than a single county will be needed to form an efficient union.

(c) *By Grouping of a Number of Cities and Towns all within a Single County into Unions of Proper Size.* — The Department should establish standards which cities and towns would use in forming unions by voluntary action in populous areas of the State where the entire county would make an awkward administrative unit.

2. *Unions established by grouping of cities and towns which include areas within more than one county.*

There are instances where it might be desirable to continue an existing union or set up a new one, composed of cities and towns in two or more counties.

3. *As a single unit of local government with a sufficient population and financial resources to maintain an approved local health department independent of other cities or towns.*

Some cities or towns in the Commonwealth are able to maintain adequate health services without the addition of others. Such units

should be eligible for subsidy without being required to join a union. Existing laws providing for administration of such units under a board of health or a commission should continue.

THE MECHANISM OF FORMATION.

The mechanism by which a new union would be formed might be as follows (Appendix 6):

I. Properly constituted authorities of cities and towns which wished to be included in the union would make application to the Department. The Department would examine the proposal and either approve or disapprove it depending on whether or not it fitted satisfactorily into the overall plan for the Commonwealth which the Department would prepare and modify from time to time. The proposal, when approved by the Department, would be voted upon by the affected town meetings or city councils. Should all affected areas vote favorably, the union would come into being upon a date specified in the proposal. Should certain affected areas vote unfavorably, the Department would determine whether those which gave a favorable vote were sufficient to form a satisfactory union. If this group was found to be satisfactory, the union would become operative on the appointed date, but not including cities and towns which had voted unfavorably. If the group was found unsatisfactory, the Department would so certify and a new beginning would have to be made.

II. In lieu of submission of a proposal for formation of a new union by representatives of cities and towns affected, the county commissioners of the county, or counties, involved may make the proposal to the Department. After action by the Department the procedure followed would be the same as in I.

III. Provision must be made for communities with less than 35,000 population which do not wish to come into such districts voluntarily but prefer to continue providing their own services independently without state subsidy.

Such local units should within a given time (ten years) meet the minimum standards for local health services established by the Department. If such a unit failed to meet these standards, the Department should be empowered to include the area within the jurisdiction of a previously established, or new, union. After such inclusion becomes effective, state subsidy would become available to the newly included area as the rest of the union to which it was added. (Appendix 7.)

At the time the law providing for the formation of unions (Appendix 6) becomes effective, all cities and towns in the Commonwealth would be put on notice by the department that they had the ten-year period within which approved voluntary unions could be made and that at

the end of this period, if minimum standards had not been met, the Department would be empowered to require that communities with less than 35,000 population join either an established or a new union.

It is essential that withdrawal of local governmental units from a union be made somewhat difficult. Upon withdrawal other than with the approval of the Department, a local governmental unit would assume the status of other units in the Commonwealth not component parts of an approved union. Transfer of a town or city from one union to another should be permitted; provided such transfer met with the approval of the Department.

Withdrawal should not be permitted, except with approval of the Department, until a municipality has been a member of the union for at least five years.

UNION BOARD OF HEALTH.

A union board of health should include one representative from each of its constituent cities or towns, plus an additional representative for each 35,000 or portion thereof beyond the first 35,000, but not to exceed five representatives from any one city or town. Representatives should serve for three-year staggered terms, with additional terms permitted.

Representatives to the union board of health should be appointed by the board of health in those municipalities where boards of health are elected. In cities and towns where the local board is not elected, such representatives should be appointed by the mayor with the approval of the local council unless a definite mode of appointment is provided in the city charter, and in towns should be appointed by the board of selectmen except when other provision is made by law. A representative appointed by the county commissioners from among their number should be a member of the board of a union which includes one or more complete counties. The board should meet at least annually and a majority of members should constitute a quorum. Members should serve without salary, but should be reimbursed for necessary travel and subsistence.

The union boards should be empowered to elect an executive committee in such number and for such purposes as the board may designate, to facilitate the business of the board.

The union boards should elect a chairman and vice-chairman, and the union health officer should serve as secretary without the right to vote. A treasurer, who may be the treasurer of one of the cities or towns in the union, should be designated by the board to serve as treasurer of the union, and should give to the board a bond with a surety company authorized to transact business in the Commonwealth as surety, for the faithful performance of his duties as treasurer of the union in such sum and upon such conditions as the board may require. In unions which include only one city or town, the city or town treasurer should serve the local health department.

DUTIES OF UNION BOARD OF HEALTH.

1. To have all powers and to assume general responsibility for all duties now established by law as functions of existing local boards of health, leaving actual administration and the enforcement of the law and of such rules and regulations as may be adopted, to the union health officer.
2. To appoint the director of health for the union —
 - (a) In accordance with minimum standards of training and experience fixed by the Department.
 - (b) At a salary at least equal to the minimum established by the Department.
 - (c) Tenure to be without limit of time, subject to removal by the board for cause after opportunity for public hearing.
3. To study, amend as necessary and approve the budget presented by the Director of Health.
4. Annually in the month of December, to fix the cost of operating the union health department and apportion said cost among the constituent cities and towns in accordance with population.
5. To adopt such rules and regulations as may be necessary, not inconsistent with state law, or rules and regulations of the Department, and to provide for their publication in a newspaper of general distribution in the area.
6. To determine the general health policies of the district including methods to distribute available health services according to health needs of various areas within the union.
7. To establish salary scales and personnel practices not inconsistent with the classification plan and minimum standards fixed by the Department.
8. To fix fees for licenses and permits to operate enterprises affecting the public health within the union unless otherwise determined by law. To arrange for the issuance of such licenses and permits and to collect fees which should not be greater than the costs of inspection and administration necessary to enforce compliance with rules and regulations of the Board.
9. To hold such hearings as may be necessary, having the right to assign to the health officer, or deputies he may designate, the authority to hold hearings.
10. To delegate to local boards of health such responsibility for holding hearings, making recommendations regarding local conditions and for other matters as the board may deem desirable.

DUTIES OF THE DIRECTOR OF HEALTH.

1. To administer the work of the Union Health Department as its chief executive officer. The board is *not* an administrative body.
2. To enforce laws of the Commonwealth pertaining to health and

rules and regulations of the Department; to enforce laws pertaining to health of the cities and towns within the union; to enforce rules and regulations adopted by the union board of health.

3. To advise the board on broad health policies, and to execute policies determined by the board.

4. To appoint new personnel in accordance with minimum standards fixed by the Department, and to supervise all employees of the board.

5. To prepare annual budgets for presentation to the board, and administer final budgets adopted by the board.

6. To prepare rules and regulations for submission to the board.

7. To prepare plans and programs to meet the health needs of the union.

8. To organize, with the approval of the board, the Union Health Department into such units as may be most advantageous to carry on the work.

9. To make annual reports and recommendations to the board and to the public, and such other reports as may be requested by the board.

PERSONNEL.

Full-time personnel employed for one year or longer by local boards of health included in a new union of cities and towns at the time of formation of the new union should become employees of the board and be supervised by the health officer. Those not under civil service should be brought under civil service under a plan of non-competitive qualifying examination, except that personnel in types of employment exempt from civil service should not be included.

Employment of part-time personnel employed by local boards of health when a new union is formed, should be at the discretion of the board.

New personnel employed by a union which receives subsidy from the Commonwealth, should meet minimum standards of training and experience established by the Department, and should be employed in accordance with the personnel classification plan of the Department.

Salaries of all personnel employed by a union which received subsidy from the Commonwealth should be no less than minimum levels established by the Department.

Provision for holidays, sick leave, retirement benefits and related personnel matters should be made by the board subject to minimum regulations of the Department.

FINANCING OF LOCAL HEALTH UNIONS.

The appropriation of local funds necessary to maintain adequate local health services must be assured by legislation requiring at least a minimum degree of support. This minimum probably can be expressed

best on a per capita basis for health purposes. Some sort of "weighting factors" to allow for seasonal shifts of population in resort areas, for institutional population and the like, would improve the per capita computation method. Such weighting factors can be administered more efficiently if they are established by regulations of the Department rather than being included in detailed form in legislation.

The agency expending a budget should be responsible for initiation of that budget. However, the Department should effect a "ministerial review" of union board budgets to allow the Department an opportunity to review each union board of health program and make recommendations. The Commonwealth should not act as disbursing agent for moneys appropriated directly for local health service by cities and towns as this would involve not only management of local funds by the Commonwealth, but would doubtless also delay payment of local obligations pending clearance of funds through the Comptroller's Bureau and the Governor's Council.

Use of an established governmental unit such as the county, is desirable in handling annual appropriations for unions. However, precedent already exists (Chapter 3, General Laws, section 27A) for empowering the joint committee of a union of towns to prepare an annual estimate of costs and "determine the proportion of such costs and expenses to be paid by the respective towns thereof during such year and shall certify the amount so determined for each such town to the assessor thereof who shall include the same in the tax levy of such year." There is no reason apparent why a similar mechanism should not be used for unions as they are established; provided, sufficient deterrent against precipitate withdrawal of cities and towns from the union is set up.

Financing of union health departments could be accomplished then by one of the following methods:

1. An approved local health unit composed of but one city or town would manage its appropriation and financing entirely locally except for such state subsidy as might be available.

2. The union boards of health would be empowered to fix their budgets and apportion the amounts to be paid by each city or town within the union, the apportionment to be made on the basis of population of each city or town, exclusive of population in county, state or federal institutions. The amount so determined for each city or town would be certified to the assessor thereof, and included by him in the tax levy for the year.

JOINT SERVICES IN THE METROPOLITAN AREA.

There is need in the Boston Metropolitan area and probably in other sections of Massachusetts for two or more unions to operate jointly certain services (laboratory,

sanitation, milk inspection, health education, etc.). Under chapter 438, Acts of 1945, it is already legally possible for suitable agreements to be made. It would be desirable to amend this act to permit union boards of health to enter into such joint agreements as are provided for in the act.

ILLUSTRATIVE EXAMPLES OF UNIONS.

Two plans for dividing the State into unions are submitted as illustrative examples of what the final picture might be. It should be understood that the proposed union health departments might actually be established in a different pattern without violation of the general principles suggested.

A tabulation shows the number of representatives that would serve on each of the union boards of health under "Plan B" and "Plan E". Again, it is necessary to point out that these are simply examples of how the proposed scheme might work in practice. Voluntary unions proposed by groups of towns might be quite different, but still acceptable.

TABLE 4. — *Plan for Local Health Units.*

PLAN "B."

[19 communities over 50,000 population. 27 additional units less than 50,000 population.]

UNIT NO.	Number of Towns.	Total Population. ¹	Number of Representatives of District Boards of Health. ²	County Health Commissioner.
1	1	86,267	-	-
2	1	108,845	-	-
3	9	83,707	10	-
4	8	88,319	8	-
5	10	74,821	10	-
6	3	69,384	4	-
7	1	111,244	-	-
8	1	49,449	-	-
9	1	101,229	-	-
10	1	107,772	-	-
11	1	60,350	-	-

¹ 1947 estimated population by Division of Vital Statistics.

² Exclusive of County Health Commissioner.

Figure 2.

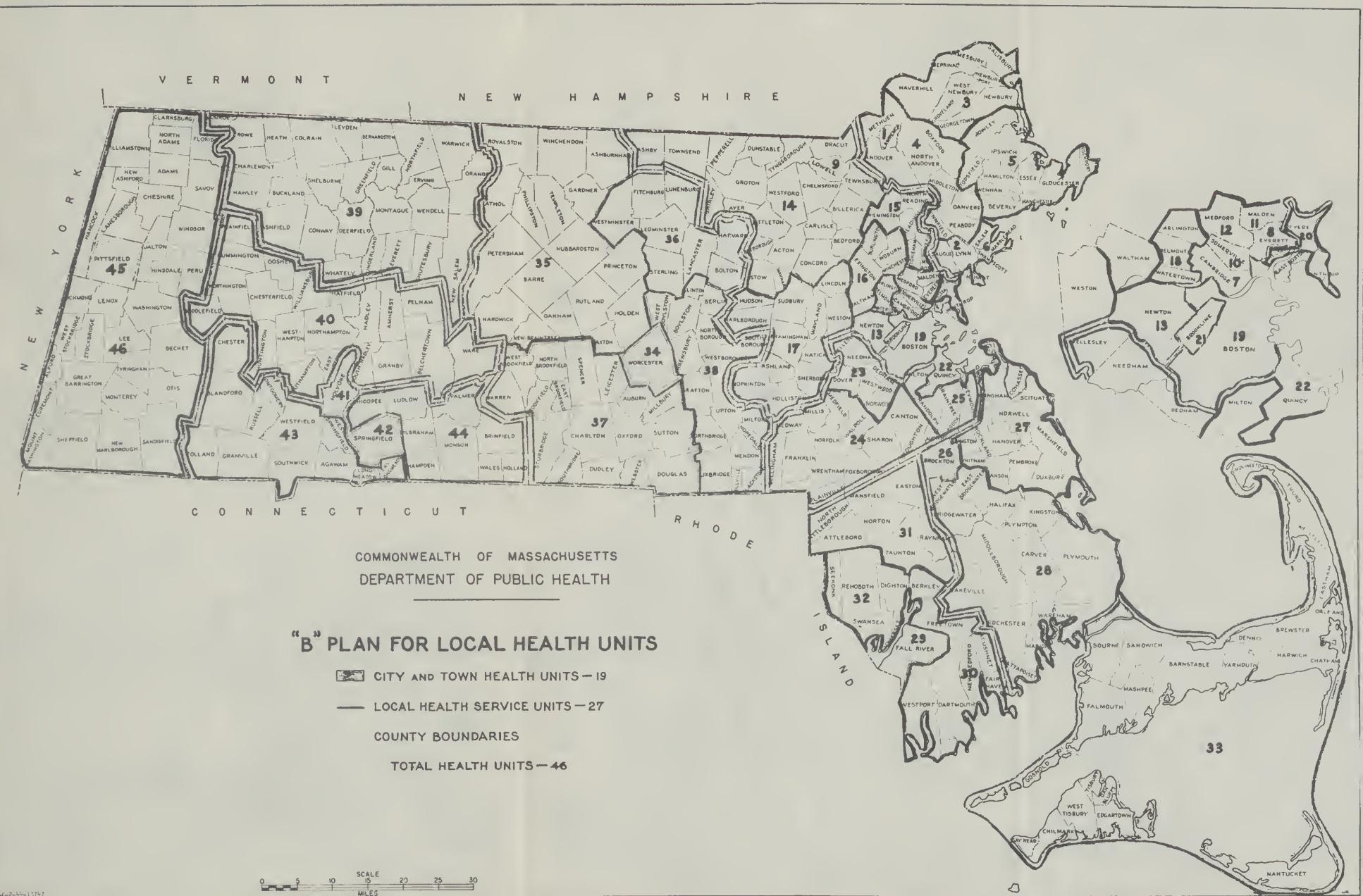


TABLE 4.—*Plan for Local Health Units—Concluded.*

PLAN "B."

[19 communities over 50,000 population. 27 additional units less than 50,000 population.]

UNIT NO.	Number of Towns.	Total Population. ¹	Number of Representatives of District Boards of Health. ²	County Health Commissioner.
12	1	69,101	-	-
13	1	81,024	-	-
14	19	71,902	19	-
15	6	84,212	6	-
16	5	93,684	6	-
17	12	91,433	12	-
18	3	113,620	5	-
19	1	766,386	-	-
20	3	94,323	5	-
21	1	59,800	-	-
22	1	81,609	-	-
23	6	74,994	6	-
24	14	68,791	14	-
25	5	87,034	5	-
26	1	66,460	-	-
27	13	62,068	13	-
28	14	60,938	14	-
29	1	115,062	-	-
30	1	110,308	-	-
31	7	99,141	8	-
32	11	61,647	11	-
33	23	46,821	23	-
34	1	201,403	-	-
35	17	63,801	17	-
36	8	71,074	9	-
37	17	91,884	17	-
38	17	95,245	17	-
39	26	42,077	26	-
40	20	75,552	20	-
41	1	53,775	-	-
42	1	165,038	-	-
43	12	65,529	12	-
44	9	76,031	10	-
45	1	55,610	-	-
46	31	74,967	31	-

¹ 1947 estimated population by Division of Vital Statistics.² Exclusive of County Health Commissioner.

TABLE 5.—*Plan for Local Health Units.*

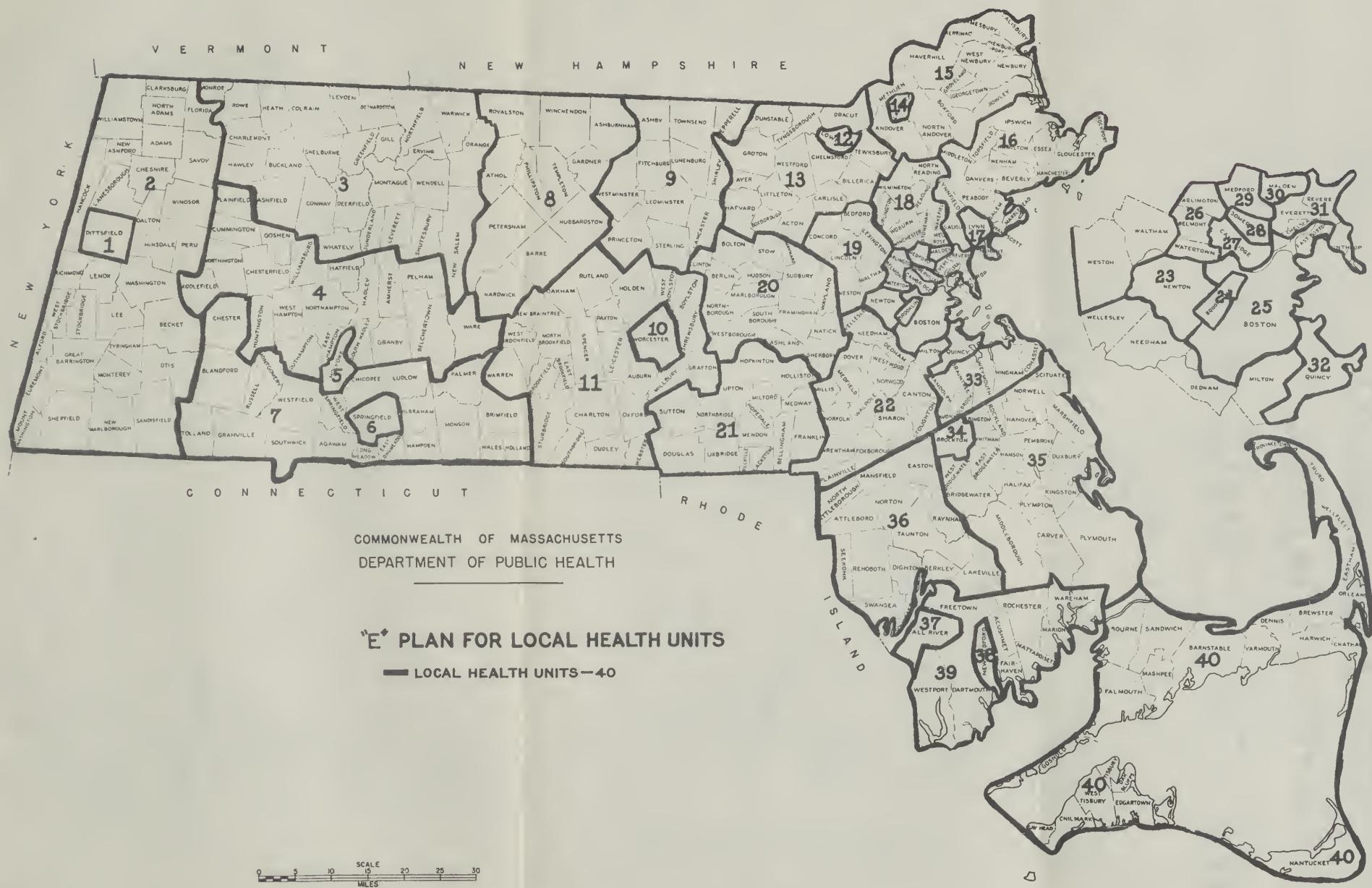
PLAN "E."

[18 communities over 50,000 population. 22 additional units less than 50,000 population.]

UNIT No.	Number of Towns.	Total Population. ¹	Number of Representatives of District Boards of Health. ²	County Health Commissioner.
1	1	55,610	-	-
2	31	54,967	31	-
3	26	52,077	26	1
4	20	75,552	20	1
5	1	53,775	-	-
6	1	165,038	-	-
7	21	141,560	22	-
8	11	54,247	11	-
9	11	89,220	12	-
10	1	201,403	-	-
11	24	117,540	24	-
12	1	101,229	-	-
13	14	50,931	14	-
14	1	86,267	-	-
15	14	130,479	15	-
16	18	206,077	19	-
17	1	108,847	-	-
18	9	122,435	9	-
19	6	81,128	7	-
20	16	112,729	16	-
21	15	72,833	15	-
22	16	129,942	16	-
23	1	81,024	-	-
24	1	59,600	-	-
25	1	766,386	-	-
26	3	113,620	5	-
27	1	111,244	-	-
28	1	107,772	-	-
29	1	69,101	-	-
30	1	60,350	-	-
31	4	143,772	7	-
32	1	84,609	-	-

¹ 1947 estimated population by Division of Vital Statistics.² Exclusive of County Health Commissioner.

Figure 3.



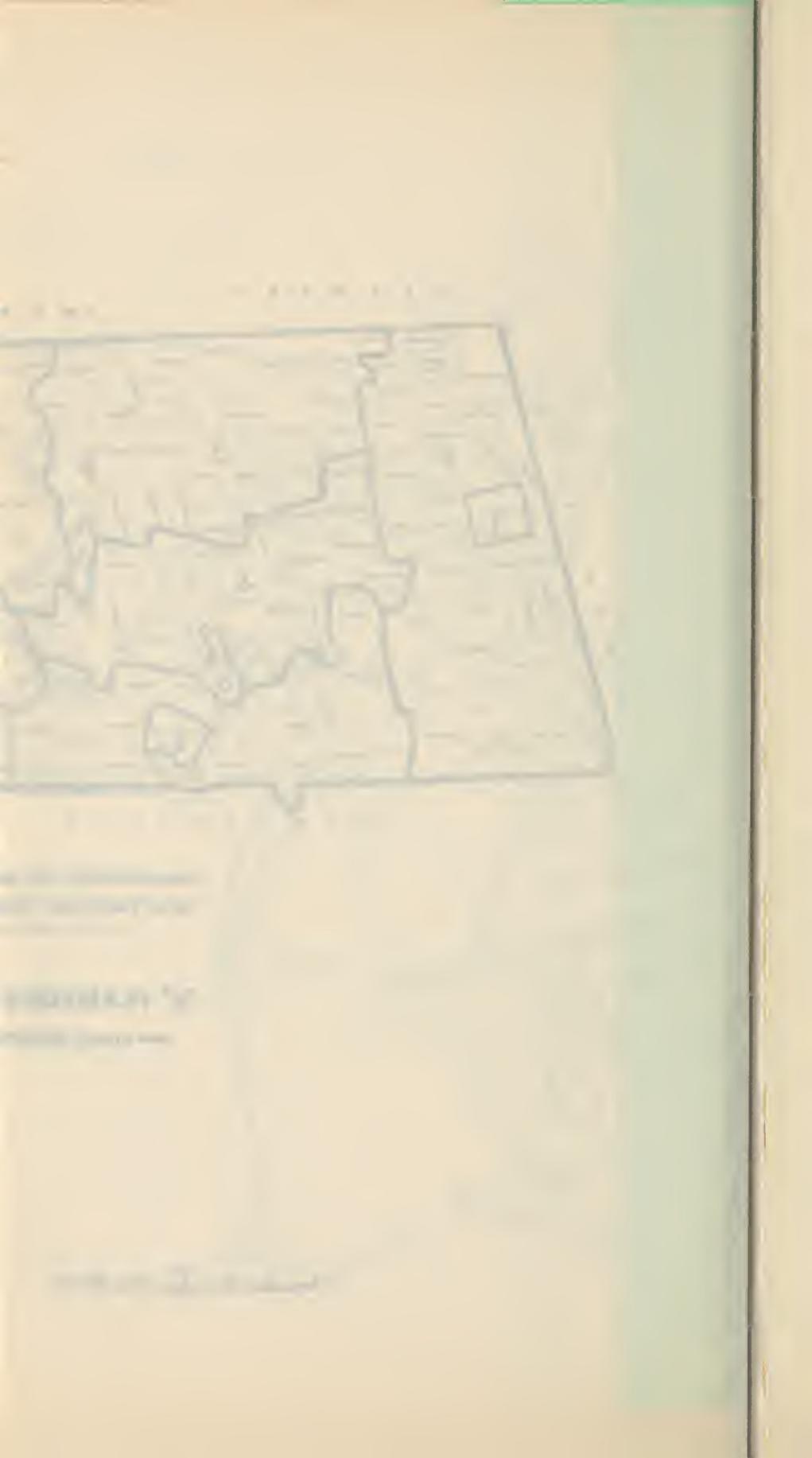


TABLE 5. — *Plan for Local Health Units* — Concluded.

PLAN "E."

[13 communities over 50,000 population. 22 additional units less than 50,000 population.

UNIT NO.	Number of Towns.	Total Population. ¹	Number of Representatives of District Boards of Health. ²	County Health Commissioner.
33	8	84,771	8	-
34	1	66,180	-	-
35	19	87,825	19	-
36	14	121,449	15	-
37	1	115,062	-	-
38	1	110,308	-	-
39	9	48,338	9	-
40	23	46,821	23	1

¹ 1947 estimated population by Division of Vital Statistics.² Exclusive of County Health Commissioner.

SANITATION.

In accordance with the recommendations contained in the Report of the Special Commission to Study and Investigate Certain Public Health Matters under chapter 73 of the Resolves of 1947, as printed in House, No. 1766, the Divisions of Sanitary Engineering and Food and Drugs, including their laboratories, Inspection Services and the Lawrence Experiment Station, have been brought together in a section of environmental sanitation and placed under the direction of a deputy commissioner of health. This is the first major reorganization of sanitary administration since the creation in 1886 of the Division of Sanitary Engineering as the first department of the reorganized State Health Authority. This unification of interest, purpose, research and action, and the resultant consolidation of administrative effort in the broad field of sanitation has the enthusiastic support of the Technical Committee on Sanitation. It will, in the opinion of this committee, further strengthen the opportunity for service that has been so richly exploited in the past within the more limited areas of sanitary engineering and the control of food and drugs.

In the sanitation of communities, public effort can ensure a clean and safe environment by engineering means — the provision of a safe and abundant public water supply, and the collection and sanitary disposal of community wastes are examples. There are within the community, however, enterprises of public health significance that are not or cannot, conveniently or economically, be conducted as public business because they do not lend themselves so readily to large-scale operations — the preparation, storage, distribution and serving of food and foodstuffs is an example. The sanitary control of such enterprises is largely a matter of public education in personal hygiene and in the conduct of those simple and largely individual operations that make for cleanliness and safety. The knowledge essential

to their successful control has long existed within the Divisions of Sanitary Engineering and Food and Drugs. They are therefore admirably prepared, in their union within a single administrative unit of the Department of Health, to support environmental sanitation in general, and to give it the needed backing in the research of the Experiment Station.

The new direction given to sanitary administration within the Commonwealth lays emphasis upon these wider and more individualistic aspects of sanitation, and has given purpose to many of the deliberations and recommendations of the Technical Committee on Sanitation.

Milk and Cream.

LOCAL MILK INSPECTION.

There was, in the past, considerable duplication of dairy farm inspection by representatives of different communities, all of which received milk from the same milk shed. A change in the law, brought about by chapter 467 of the Acts of 1946, removed the compulsory requirement that the Director of the Division of Dairying and Animal Husbandry of the Department of Agriculture accept all of these dairy farm inspection reports and thereby eliminated much of the confusion resulting from the different interpretations of individual local inspectors. There is now good co-operation between the Division of Dairying and the local inspectors as to the interpretation of dairy farm requirements. Local inspectors are generally accepting the dairy farm regulations promulgated by the Milk Regulation Board and enforced by the Division of Dairying.

In view of the success of this experience, it seems advisable to extend regional milk inspection to eliminate duplication and expense involved in the analysis of milk samples collected by separate cities and towns on the same day from the same dealer. However, it seems wise to do so in a manner that will permit local boards of health to retain their right to regulate the milk supply

of their own communities. Operations of county units as well as of health district units, established upon an experimental basis for the consolidation of milk inspection, have not been entirely successful, because too many of the individual towns have refused to accept the idea of regional milk inspection.

Since existing legislation permits more than one city or town to employ the same milk inspector, it appears to offer a means, particularly for the smaller towns, to eliminate duplication of sampling. This means appears to be preferable to the assignment of inspection to health units, or to district organizations. Local authorities can thereby retain their individual rights relative to the regulation of the milk supply.

Based upon past experience with both county and other unit organizations, therefore, it is the recommendation of the Technical Committee on Sanitation that further promotion of the district inspection plan be deferred, and that the smaller towns be encouraged to employ jointly the same milk inspector as provided for under present statutes. No further legislation is needed to accomplish this.

CONTROL OF "EMERGENCY MILK" SUPPLIES.

Each year, usually beginning in November and continuing throughout April, Massachusetts experiences a shortage of milk from its normal milk shed, which comprises the New England States and a large part of the State of New York. This normal supply is subject to regular inspection by the Massachusetts Department of Agriculture at the many dairy farms on which the milk is produced. In addition, each of these farms is required to obtain a certificate of registration from the Director of the Division of Dairying of the Department of Agriculture, indicating that the producer is complying with the regulations of the Milk Regulation Board covering construction of the dairy barn, the handling of milk upon the farm, the safety of the water supply, and compliance in the requirements of general sanitation.

During periods of shortage from the area, the Milk Regulation Board is authorized, under the provisions of chapter 94, section 16H, to permit the entrance of uninspected milk into the State through the issuance of temporary certificates of registration without inspection of the place of production.

Early in the fall of each year when the normal milk supply begins to drop off, the larger milk dealers and co-operatives, which distribute milk to smaller dealers in Massachusetts, urge the Milk Regulation Board to declare an "emergency" and thus to permit the importation of milk from uninspected sources. These sources include the middle western States as far distant as Minnesota. If the Milk Regulation Board declares an actual or threatened emergency, the Director of the Division of Dairying issues permits to various milk dealers and distributors, authorizing importation of milk from these distant sources. The name of the emergency source appearing upon the temporary permit is that of a creamery or co-operative or other distributor located in the Middle West and engaged in assembling milk from numerous dairy farms. In the absence of an adequate organization it is impossible to inspect these dairy farms and even to inspect the assembling plant or shipping point.

Although temporary permits are issued with the stipulation that the receiver within Massachusetts shall inform the Director of Dairying of the shipments received, the information reaches the Director too late for inspectional purposes, and there is at present no means by which the Director will know the arrival date of a particular lot of milk, or the name of the Massachusetts dealer or distributor for whom it is intended.

Responsibility for inspection of milk upon arrival within the Commonwealth rests with state and local health authorities. The spotting of a particular lot of milk for inspectional purposes depends, however, entirely upon chance. Many lots of emergency milk are inspected, but many are not because they have not been discovered.

The quality of samples of "emergency" milk has been

far from satisfactory. The bacterial counts have often been extremely high, and the presence of numerous leucocytes has indicated the possible existence of mastitis within the herds. There has been evidence that some of the milk has been heated or "flashed" prior to shipment. Flashing may disguise the original condition of the milk and is illegal in itself. Large quantities of this emergency milk have been condemned by local inspectors upon arrival, and the Department of Public Health, which does not have the authority to condemn, has requested revocation of a number of permits. These requests have, in many instances, been honored by the Director of the Division of Dairying. Revocation is intended to prevent the Massachusetts dealer from receiving further shipments of milk from a particular source, although no method is provided by law for the enforcement of such revocation.

The Division of Dairying of the Massachusetts Department of Agriculture and the State's Milk Regulation Board agree with the Department of Public Health that there should be better control over emergency milk. In the opinion of the Technical Committee on Sanitation this can be attained by revising section 16H of chapter 94 to require (1) that middle western distributing plants obtain from the Massachusetts Department of Agriculture a permit which shall be revoked if milk of unsatisfactory quality be shipped into the Commonwealth; (2) that Massachusetts dealers obtain emergency supplies only from distributors who hold such permits; (3) that existing regulations of the Milk Regulation Board pertaining to milk plants be made applicable to western plants supplying emergency milk; (4) that these plants be required to inform the Department of Agriculture of every shipment in advance, thus enabling local and state health departments to obtain advance information relative to the time of arrival and the destination of each lot of milk; and (5) that the right of confiscation and condemnation for failure to comply with Massachusetts requirements relative to quality of such milk be provided in the law.

The Technical Committee on Sanitation further suggests that in the absence of outside state certification the Massachusetts Department of Public Health be given the right to inspect all lots of milk shipped from without the Commonwealth.

In order to carry out these recommendations, proposed legislation is attached. (Appendix 8.)

CONTROL OVER CREAM.

There is a great need for more satisfactory control over the sale of cream in Massachusetts. In contrast to regulations covering the sale of milk, existing legislation does not require dairy farms producing cream to have a certificate of registration. Most of the cream sold in Massachusetts, furthermore, is shipped in from the Middle West. Unless this cream is filthy, or adulterated within the meaning of section 19 of chapter 94, or unless the cream is pasteurized in a licensed pasteurization plant within the Commonwealth, neither the Department of Public Health nor the Department of Agriculture nor a local authority has any control over its production or sanitary quality, as determined by a bacterial standard at the time of sale or delivery; and again, in contrast to milk, the Milk Regulation Board is not empowered to establish a bacterial standard for cream, although it is regularly used by dairy plants for standardization purposes. At the present time western cream is not subject to inspection either at its place of production or at the creamery from which it is shipped. Uninspected and high-count cream is regularly added to clean milk in the standardization process, and as long as the final bacterial count of the milk at the time of delivery is within the limits set by the Milk Regulation Board, no control is exerted over this practice.

Since 1936 there have been repeated attempts to place cream under the same control as milk; all of these have failed. Because it does not appear to be economically possible for the dairy farm inspectors of the Department of Agriculture to cover in a satisfactory manner the large

number of dairy farms throughout the Middle West which contribute to the Massachusetts cream supply, it is the opinion of the Technical Committee on Sanitation that control can possibly be secured by requiring western creameries which ship cream into the Commonwealth to do so under a permit from the Massachusetts Department of Agriculture, which permit could be revoked or suspended either for unsatisfactory sanitary conditions within the creamery or for the shipment of an unsatisfactory product into the Commonwealth. Such a permit would establish the right of inspection of the western creameries, and should be revoked or suspended by the Department of Agriculture, upon the recommendation of the Department of Public Health (as based upon the examination of the cream as received). It is the recommendation of the Technical Committee on Sanitation, furthermore, that the Milk Regulation Board be authorized to adopt sanitary standards for all cream.

Since cream must be imported from the West in order to provide a sufficient supply for the demands of the Commonwealth, proposed legislation establishing a permit system is appended. (Appendix 9.)

Food — Other than Milk.

REGULATION OF SLAUGHTERING.

As a result of the enforcement duties of the Veterinary Food Inspectors certain inadequacies existing in the law pertaining to slaughtering have become apparent. The principal inadequacy is contained in those sections relative to the inspection of slaughtered animals, the carcasses of which are not intended to be sold for human food. The law requires that animals slaughtered in a licensed slaughterhouse be inspected and either passed or condemned at the time of slaughter, regardless of whether the carcass is intended for animal or human food. If carcasses of animals have been slaughtered outside of the Commonwealth or within it, but not in a licensed slaughterhouse, the law is indefinite as to the inspection require-

ments in the event that the carcass is to be sold for animal food. Within the past two years the slaughtering of horses has increased markedly. There are now three licensed horse-slaughtering establishments in Massachusetts, and uninspected horse meat labeled as intended for animal food is coming into the Commonwealth from the West, notably from Kansas and Texas. This meat is admitted to interstate commerce if the requirements of the United States Bureau of Animal Industry are met as to labeling.

At least a part of this out-of-state horse meat, however, is being diverted to human food uses after its arrival into Massachusetts. For these reasons it is believed that the meat of all slaughtered animals either shipped into or slaughtered within the Commonwealth (either in a licensed slaughterhouse or upon the premises of the owner) should be inspected at the time of slaughter. Identical labeling and inspection should be mandatory for all meats whether or not they are intended for human food. At the present time the Department of Public Health has no method of obtaining advance information on the arrival of out-of-state shipments.

It is known that the official stamps furnished only to the board of health of a municipality (for the use of its inspectors) by the Massachusetts Department of Public Health have in certain instances been duplicated. Since the possession of a counterfeit stamp by a licensed slaughterer allows its use in the illegal stamping of uninspected carcasses, it is the recommendation of the committee that the section of the slaughtering laws, which makes counterfeiting a stamp an offence, should be amended to include illegal possession of such a stamp. (Appendix 10.)

It is also known that deliveries of parts of unstamped carcasses have been made in instances in which it was impossible to prove illegal sale or possession with intent to sell. Hence it is suggested that the penalty for illegal sale or possession with intent to sell of an unstamped carcass should apply also to delivery of such unstamped carcasses. (Appendix 10.)

Since the salary of local slaughtering inspectors is usually in proportion to the fees collected from licensed slaughterers, the general license fee of \$1 for each slaughtering establishment seems inadequate, although towns may, in accordance with the provisions of section 120 of chapter 94, increase the fee up to \$100 at any annual town meeting. It is therefore suggested by the Technical Committee on Sanitation that the law be amended to increase the fee either to \$10 or to \$25. There is much complaint from local slaughtering inspectors that their salary is so meagre that they would gladly relinquish their duties if they were able to secure other and more adequate remuneration.

Section 120A provides that a town may, in addition to the annual license fee, require the payment of a further fee, not exceeding \$1, for each animal slaughtered in a licensed slaughterhouse, but this section does not permit cities to make such additional levy. Because the slaughtering inspector of some of the smaller cities is paid so little, and because such cities could use the additional revenue which the adoption of this amended section might provide, it is suggested that this restriction as applied to cities be removed. (Appendix 10.)

SANITATION OF LOBSTER AND CRAB MEAT PICKING PLANTS.

The regulations of the Department of Conservation, as approved by the Department of Public Health, governing the operation of shellfish shucking plants, do not apply to lobster and crab meat picking plants. However, wholesale and retail dealers in lobsters and crabs, who remove meat from the shell at a regular place of business, must obtain a written permit from the Director of Marine Fisheries and conform to such conditions and regulations as Marine Fisheries may prescribe. These regulations have proved themselves to be inadequate for the maintenance of satisfactory sanitary conditions in picking plants, and there occur every year outbreaks of food poisoning that appear to be traceable to lobster and

crab meat picking establishments. Inspectors of the Food and Drug Division have been called in at such times and have found the sanitary conditions of lobster and crab meat picking plants far from satisfactory.

Sea water pumped into tanks in which live lobsters are kept constitute the principal source of contamination of cooked lobster and crab meat removed from the shell. This sea water overflows continually from the tank on to the floor and contaminates either the ice used for the packing of the picked meat, or the containers into which the cooked meat is placed for shipment, or cooked lobsters or crabs are placed for transfer to the picking benches. In many instances, too, sea water is used for the cooling of cooked lobsters or crabs prior to picking. Well-worn containers, including baskets, cartons, barrels and wooden boxes, are furthermore regularly used both for the transfer of live lobsters from the swimming tanks and the transfer of cooked lobsters to the picking benches. These containers, especially baskets, are nested one into the other, and when not in use stand upon the floor of the plant, wet with sea water. Ice used for packing purposes is regularly in contact with the same floor. Since the sea water is drawn from the harbor waters that wash the picking plant it is almost invariably heavily polluted.

Recent inspections of some plants have revealed that unsanitary conditions continue to exist in spite of the surveillance that it has been possible to give picking plants under present laws.

Definite improvement could, in the opinion of the Technical Committee on Sanitation, be realized if the Department of Public Health were given the authority to adopt and enforce regulations under the authority of chapter 130, sections 45 and 46, and suggested legislation is appended to this purpose. (Appendix 11.)

FOOD AND RESTAURANT SANITATION.

Acute and chronic gastro-intestinal diseases often resulting in severe illness are associated with unsanitary conditions in restaurants and other food-handling estab-

lishments. These unsanitary conditions, in the opinion of the Technical Committee on Sanitation, could be remedied by minimum regulations adopted by the State Department of Public Health.

Within the Commonwealth, furthermore, there is not adequate provision for the control of certain purveyors of food for human consumption, and there have been serious outbreaks of illness that might have been prevented by essential inspection, supervision and licensure.

In the opinion of the Technical Committee on Sanitation, it should be the responsibility of the local board of health and the State Department of Public Health to enforce a standard of environmental sanitation and conduct of the business of catering, itinerant restaurateur, and itinerant pedler of food in a manner that would limit the possibility of public health hazards arising from the serving of food and drink. (Appendix 13.)

At the present time it is not mandatory that licensing authorities within cities and towns in the Commonwealth receive a satisfactory report from a local board of health that environmental conditions and the plan of operation of eating and/or drinking establishments shall have the approval of the local board of health.

In the opinion of the Technical Committee on Sanitation responsibility should be placed on local boards of health for proper sanitary construction, maintenance and operation of eating and drinking establishments. This will not prevent the State Department of Public Health from functioning as provided for in the statutes of the Commonwealth.

Accordingly, it is recommended that chapters 94 and 140 of the General Laws be amended, and suggested legislation is appended. (Appendix 12.)

SALE OF TOXIC SUBSTANCES.

The present poison laws of the Commonwealth identified principally as section 2 of chapter 270 of the General Laws, are applicable only to the materials specified in the law when they are sold in concentration of 100 per cent.

Since poisons may be toxic in small amounts, even when their concentration is less than 100 per cent, it seems desirable, in the opinion of the Technical Committee on Sanitation, to amend the present law and to require that precautionary labels be placed upon products containing any quantity of poisonous material that is present in sufficient amount to result in injury if consumed.

It is therefore recommended in the appended legislation (Appendix 14) that the Board of Pharmacy be empowered to determine the amounts of these poisonous substances which should require the "Poison" label. The proposed legislation is identical with that of House, No. 1200, 1937.

Industrial Sanitation.

IMPROVEMENT OF OCCUPATIONAL HYGIENE.

The problems of occupational hygiene and the prevention of industrial diseases are real and widespread. Most of the advances in knowledge concerning these diseases have been made in the last decade. Although much progress has been scored, there is evidence to show that even more can be done through provision of better medical and nursing care in industry. This is especially true in reference to small industrial plants. Co-operation of official agencies, the medical profession, industry and labor is essential for attaining the best results.

Section 11 of chapter 149 of the General Laws provides that the Department of Labor and Industries may require physicians treating patients whom they believe to be suffering from any disease contracted as a result of the nature or conditions of the patient's employment, to report such information to it. In the year 1944, however, only 84 such cases were reported to the Department and the Division of Industrial Safety investigated 237 cases of industrial illness. By contrast, 2,900 cases of industrial illness were reported in the State of Connecticut in the same year. Inasmuch as the industries of Massachusetts and Connecticut are similar and the number of workers covered by unemployment compensation in

manufacturing industries in 1944 amounted to 460,873 in Connecticut against 797,038 in Massachusetts, it would seem that approximately 5,000 industrial disease reports should have been received if adequate coverage had been obtained in Massachusetts. Since the Department must pay a fee of 50 cents for each such report, a sum of approximately \$2,500 would have had to be expended. The amount of money actually allotted for this purpose has, however, never exceeded \$150. Consequently, no concerted campaign has been directed by the Department to encourage physicians to report occupational diseases. It is believed that better reporting by physicians would be of material assistance in compiling the evidence needed to guide the preventive program of the Commonwealth.

It is therefore recommended that a program for securing better reporting of occupational diseases be adopted by the Department of Labor and Industries.

CHEMICAL SUBSTANCES HARMFUL TO THE HEALTH OF INDUSTRIAL WORKERS.

In 1933 and 1935, sections 142A to 142F were added to chapter 149, providing that the Department require the labeling of containers in which benzol or mixtures containing benzol were kept. As a result no cases of benzol poisoning were reported or had to be investigated during the five years from 1941 to 1945, inclusive. In the preceding six years, by contrast, 13 cases, of which 5 were fatal, were investigated. There is evidence, therefore, that the benzol labeling law has appreciably reduced the incidence to benzol poisoning in Massachusetts. In the opinion of the Technical Committee on Sanitation, considerable further progress in the prevention of industrial poisonings could be made if the benzol labeling law were amended to include certain other widely used and highly toxic substances. Sufficient deaths and illnesses have occurred through inhalation of carbon tetrachloride, for example, to warrant the inclusion of this substance in such an amended law.

Suggested legislation for the extension of the labeling law is appended. (Appendix 15.)

Plumbing, Housing and Ventilation.

ADMINISTRATIVE ASPECTS OF SANITATION IN INDUSTRY.

Under the General Laws of the Commonwealth both the Department of Public Health and the Department of Labor and Industries are responsible for the health of the worker in industry so far as a safe water supply is concerned. For example, chapter 149 of the General Laws, sections 5 and 6, dealing with the Department of Labor and Industries, reads as follows:

SECTION 5. The department may investigate conditions existing in any line of industry, and such investigations may be extended outside of the commonwealth to procure information to promote industrial development or to improve industrial conditions. It shall receive all complaints concerning conditions existing in any industry carried on in the commonwealth, or concerning alleged violations of any laws enforced under its direction, and shall thereupon make or direct all needful and appropriate investigations and prosecutions.

SECTION 6. It shall investigate from time to time employments and places of employment, and determine what suitable safety devices or other reasonable means or requirements for the prevention of accidents shall be adopted or followed in any or all such employments or places of employment; and also shall determine what suitable devices or other reasonable means or requirements for the prevention of industrial or occupational diseases shall be adopted or followed in any or all such employments or places of employment; and shall make reasonable rules, regulations and orders applicable to either employers or employees or both for the prevention of accidents and the prevention of industrial or occupational diseases.

It will be seen from these sections that the Department of Labor and Industries has the responsibility of investigating all conditions in industry that may injure the health of the worker. This certainly should include the investigation of piping within the plant whereby the drinking water of the industrial worker might become contaminated through back siphonage, more especially those where such siphonage might introduce cyanide of potassium or other poisons from vats into the drinking water system, pollu-

tion through cross connections from a polluted industrial or fire supply, and pollution through faulty plumbing.

Similar responsibilities rest with the Department of Public Health; for example, in sections 17, 159 and 160 of chapter 111 of the General Laws. Under the provisions of this section, the Department of Public Health has adopted regulations relative to cross connections between potable and non-potable water supplies. In connection with the enforcement of these regulations, a representative of the Division of Sanitary Engineering of the Department of Public Health makes regular inspection of industries *not only* as to double check valve installations at the property line, but also throughout the plant, for the purpose of determining the existence of cross connections and back siphonage conditions which might affect the public water supply. These inspections are primarily for the purpose of protecting the public water supply in the street, and, while rigidly and completely done at the main connection at the property line, they are not sufficient to protect the health of the worker in the plant.

The Technical Committee on Sanitation, after due consideration of this problem, is of the opinion that inspections should be made by representatives of the Department of Labor and Industries throughout the plant, exclusive of the main connection at the property line. This can be accomplished through mutual agreements by the two departments. Additional legislation is not necessary.

REVIEW OF EXISTING PLUMBING STATUTES.

The Special Commission, which was directed to study and investigate public health laws and policies, in its report published as House Document No. 1200 of 1937, had the following to say regarding plumbing regulations:

There is at present no uniformity as to plumbing regulations throughout the commonwealth. The Commission realizes that to a certain extent such rules must vary according to local circumstances, but believes that it is possible to draw a minimum code, sufficiently flexible to meet these local requirements. It therefore recommends that the present power of the State Examiners of Plumbers, to promul-

gate such regulations subject to the approval of the Department of Public Health only if requested by individual communities, be broadened to make such minimum regulations mandatory throughout the commonwealth (Appendix XXIII). These requirements would not deprive the local boards of health of the right to adopt such additional regulations as might be deemed necessary.

In connection with these recommendations, the Special Commission submitted to the Legislature for its consideration a proposed act providing for uniform plumbing regulations. This act would have authorized the Examiners of Plumbers to formulate rules and regulations relative to the construction, alteration, repair and inspection of all plumbing work within the Commonwealth, these rules and regulations to be subject to the approval of the Department of Public Health. This legislation failed of enactment. Accordingly, the plumbing laws, as of the present date, are limited to those contained in chapter 142 of the General Laws.

Chapter 142 of the General Laws, however, is in no sense a substitute for a plumbing code, because as far as being obligatory for a municipality to adopt by ordinance or by-law the regulations concerning plumbing, plumbing, in this respect, relates only to "pipes, tanks, faucets, valves and other fixtures by and through which waste water or sewage is used and carried", and does not relate, except indirectly, to pipes carrying water. As far as cities or towns of less than 5,000 inhabitants are concerned, furthermore, the Examiners of Plumbers can formulate rules and regulations *only upon petition of the board of health* of that city or town, and such rules and regulations must be accepted by the board of health before being effective in the town.

The inadequacy of present laws in regard to plumbing was not only established in 1937 by the Special Commission in House Document No. 1200 of that year, but has been recognized from time to time also by those actively associated with the plumbing industry. For example, there was filed with the Legislature of 1947, Senate, No. 255 which is a "Resolve providing for an Investigation and Study of, and Preparation of, Uniform

Minimum Plumbing Requirements for Adoption throughout the Commonwealth." This bill failed of enactment, and although the Recess Commission on the Safety of Persons in Buildings under chapter 46 of the Resolves of 1947 was instructed to ". . . consider the advisability of providing . . . minimum plumbing requirements which shall apply throughout the Commonwealth", the report of that Commission has failed thus far to provide such minimum requirements.

In addition, there was filed with the Legislature of 1948 a bill known as Senate, No. 354, which authorized the Examiners of Plumbers to formulate rules and regulations relative to the construction, alteration and repair of all plumbing work. A revision of Senate, No. 354 was presented late in the session to the Legislature of 1948 by the Massachusetts Association of Master Plumbers, Inc., through their attorney, Mr. Jarvis Hunt. This revision also failed of enactment.

The Technical Committee on Sanitation has been advised by the Recess Commission on Safety of Persons in Buildings (created by chapter 66 of the Resolves of 1943 and revived annually thereafter) that it now has under consideration that phase of chapter 46 of the Resolves of 1947 relative to the advisability of providing statewide minimum plumbing requirements, and has appointed a special committee for that purpose.

In view of this action by the Recess Commission on Safety of Persons in Buildings it is the opinion of this committee that no legislation should be recommended pending the report of that commission.

A REVIEW OF EXISTING HOUSING STATUTES.

The Special Commission to Study and Investigate Public Health Laws and Policies in their report to the Legislature, published as House, No. 1200 of 1937, refers to the various community services tending to correct the damage due to poor housing conditions, and emphasized that health hazards in the tenement districts are much less than in former years. It refers to the basic fact that

in many communities large numbers of people are unnecessarily living in poor sanitary conditions, not only because of overcrowding, but also because of lack of certain basic facilities to maintain decent standards of cleanliness. The commission indicated that the promotion of proper measures to improve housing conditions is a proper activity for health departments. Reference is made to chapters 144 and 145 of the General Laws relating to so-called tenement house laws in cities and towns, which include certain minimum specifications as to the construction and maintenance of such tenements. The laws are subject to acceptance by the municipality in order to become effective; but 1 city and 19 towns have accepted them. These statutes are generally considered to be outmoded. That commission expressed the opinion that certain basic requirements as to housing should be established which would be applicable throughout the Commonwealth, and recommended that a special commission be appointed to study the present tenement house laws and to evolve, if possible, a code which would be suitable for general application throughout Massachusetts. The proposed resolve under House Bill No. 1200 of 1937 failed of enactment.

Under chapter 50 of the Resolves of 1943 a special recess commission was appointed for the purpose of inquiring into the laws relating to the construction, maintenance and use of buildings used for human habitation. The report of this commission was published as House, No. 4 of 1945, and contained a resume of the laws relating to the maintenance and use of buildings used as dwellings. This report states that cities and towns in Massachusetts have for many years been given ample power to enact their own building codes under section 3 of chapter 143 of the General Laws, which reads as follows:

SECTION 3. Every city, except Boston, and every town which accepts this section or has accepted corresponding provisions of earlier laws may, for the prevention of fire and the preservation of life, health and morals, by ordinances or by-laws consistent with law and applicable throughout the whole or any defined part of its territory, regulate the inspection, materials, construction, alteration, repair, height,

area, location and use of buildings and other structures within its limits, except such as are owned or occupied by the quays and wharves, and may prescribe penalties not exceeding one hundred dollars for every violation of such ordinances or by-laws.

Taken at its face value, this statute seems entirely adequate, but it is generally agreed that the building regulations in many of the cities and towns which have adopted them are inadequate or obsolete. In more than two thirds of the cities and towns of the Commonwealth no building regulations whatever are in force. In connection with the maintenance and use of dwellings, House, No. 4 refers to section 128 of chapter 111 of the General Laws, as amended by chapter 468 of the Acts of 1943. This law, as amended, contains five requirements of fitness for a building used for human habitation, violation of two or more of these requirements being deemed sufficient grounds for determining the building unfit for dwelling purposes. This Commission submitted proposed legislation which would provide for the establishment of minimum standards for the construction, maintenance and use of buildings for human habitation. This proposed legislation failed of enactment.

Under chapter 631 of the Acts of 1947 the Commissioner of Public Health must assist the Board of Standards in the Department of Public Safety in preparing regulations or requirements for municipalities as to the inspection, materials, construction, alteration, repair, height, area, location and use of buildings or other structures which shall be in conformity with accepted standards of engineering practice, or fire prevention practice, or of public health practice in relation to health, sanitation and the prevention of the spread of disease, as applicable to buildings or structures used for dwelling purposes.

Chapter 631 amends section 128 of chapter 111 of the General Laws by providing that the Department of Public Health, after notice to all persons it deems interested, and after public hearing, shall make, and from time to time amend, alter or repeal, such regulations as it deems reasonable and necessary to establish the minimum standards

of fitness for human habitation; failure to comply with which, with relation to a dwelling place and its premises, the use or occupancy thereof, the equipment thereof, or a condition thereon, shall constitute a nuisance or shall render such dwelling place unfit for human habitation.

Both regulations provided for under chapter 631 become effective only upon acceptance by a municipality.

VENTILATION REQUIREMENTS FOR SCHOOLS AND OTHER PUBLIC BUILDINGS.

During the past sixteen years three committees have been officially appointed from time to time to study the need of revising laws and regulations dating back to 1888 and relating to the ventilation of school and public buildings that are subject to the provisions of chapter 143 of the General Laws.

The first committee, appointed by the Commissioner of Public Health in 1932, drafted certain new standards which conformed to the recommended practice of that time. These standards were adopted by the Public Health Council but not by the Department of Public Safety.

Two later committees appointed by the Commissioner of the Department of Public Safety failed to reach agreement on any important issues and made no recommendations for amendment of existing regulations. In short, the major provisions of the measure of 1888 are still in force.

Contrasting views, influenced to a considerable extent by personal interests, center around the following two widely debated questions:

1. Could the present mandatory requirement of 30 cubic feet per minute of outside air per occupant be revised downward in the interest of economy without affecting health and comfort?

2. Should the mandatory equipment requirements — which specify methods and apparatus to be used — be eliminated altogether, or at least sufficiently to prescribe the hygienic conditions to be maintained, leaving to engineers and architects, and to the legal authority

designated, to approve plans and specifications as to the choice of methods and equipment.

Many ventilation engineers are opposed to any reduction in the compulsory 30 c.f.m. standard, despite the fact that the recommended practice¹ where no legal requirements exist is only 10 to 15 c.f.m. of outside air per occupant. Most of the States, which formerly adopted the Massachusetts 30 c.f.m. standard have recently changed it to conform with recommended practice or have stricken it out of their statute books altogether.

Mandatory equipment requirements are likewise objectionable to some engineers but strongly favored by others who want to know exactly what is required by law in order to be sure of having their plans and specifications approved. Little recognition seems to be given to the fact that it is impossible to standardize on methods and apparatus to cover all situations for all times.

Faced with similar troubles, the New York Legislature has cut right through to the heart of the problem. Under the term of the Cheney bill, signed into law in April, 1940, all compulsory requirements of floor area, air space, outside air supply and equipment standards formerly applying to public schools were eliminated. The new measure concisely requires ". . . facilities for heating and ventilation adequate to maintain healthful and comfortable conditions in classrooms and study halls."

In this connection The Technical Committee on Sanitation calls attention to the Ventilation Standards prepared in 1932 by the Massachusetts Department of Public Health for adoption by the Department of Public Safety in the exercise of their duties under the General Laws in matters of ventilation requirements. These standards should in the opinion of the Committee be again urgently recommended for adoption.

It is further recommended that the Rules and Regulations of the Department of Public Safety (articles 11 to 13, inclusive, and articles 20 to 35, inclusive) adopted

¹ Established by the American Society of Heating and Ventilating Engineers in 1932 and followed by all technical and trade organizations in the field.

under chapter 143 of the General Laws be rescinded and the following article substituted under the caption "Heating and Ventilation."

In all schools and public buildings that are subject to the provisions of chapter 143 of the General Laws, adequate means for heating and ventilation shall be provided to maintain a comfortable thermal environment and to prevent accumulation of objectionable odors and other impurities in the air during periods of occupancy.

Such a measure should be fair to all parties concerned and should reduce considerably installation and operational cost of heating and ventilating systems.

Nuisances including Smoke.

NUISANCE LAWS.

Under existing Massachusetts statutes, the Department of Public Health has no mandatory authority concerning nuisances except in the case of offensive trades (sections 143 and 147, of chapter 111 of the General Laws, as amended by chapter 480 of the Acts of 1948). As far as nuisances in general are concerned, the General Laws are very specific in delegating authority for control to local boards of health.

Section 123 chapter 111 sets forth the procedure to be taken by the local board of health to abate a nuisance; section 124 concerns service of order for abatement; section 125 deals with the removal of the nuisance by the local board; section 128 prescribes the ways and means for declaring premises unfit for human occupancy; sections 129 to 131, inclusive, cover the legal proceedings for removal of nuisance on conviction of owner; and section 132 gives specific powers to boards of health in the matter of wet, rotten or spongy land and land covered with stagnant water.

The method employed in the serving of notices to abate nuisances (chapter 111, section 124) involves the employment of personnel endowed with power to serve civil processes, and these process servers are confined to serving such orders in the county issuing the warrant.

The process server, under the present statute, serves orders personally to the individual addressed, or may leave a copy of the order at the last and usual place of abode of said individual. Since, in many instances, premises are owned by individuals who do not live within the county where the nuisance exists, and since the process server is not authorized to serve the order outside of his own county, there are delays in the abatement of nuisances, which may endanger the public health.

In order to expedite the abatement of nuisances, the Technical Committee on Sanitation deems it desirable that registered mail with return receipt to a person known to be within the Commonwealth be made a duly authorized service. Legislation to this purpose is accordingly recommended. (Appendix 16.)

SMOKE ABATEMENT.

Air pollution by smoke and attendant inconveniences, and undesirable conditions has plagued many cities in this country.

As early as 1910 the General Court recognized the seriousness of this problem and enacted a provision for the abatement of smoke in the city of Boston and its vicinity. In 1910 chapters 380 and 412 were enacted establishing a division of smoke inspection in the Department of Public Utilities for the regulation of the emission of smoke from plants and furnaces burning fuel and waste material. This division was abolished in 1933 but re-established in 1934. In 1936 chapter 188 of the General Laws provided relief in the city of Boston against the escape or discharge of cinders, ashes or other solids from buildings in or upon which furnaces or boilers with forced or induced draft were used, and in 1938 chapter 140 amended previous acts to define the now accepted degrees of emission of smoke from stacks in the Metropolitan smoke abatement district.

The Smoke Abatement Division has jurisdiction in a district comprising that part of Boston Harbor lying west of a line drawn from the northwest of Deer Island

to the northeastern point of Long Island and the territory comprised by the cities and towns of Arlington, Belmont, Boston, Braintree, Brookline, Cambridge, Canton, Chelsea, Dedham, Everett, Lynn, Malden, Medford, Melrose, Milton, Needham, Newton, Quincy, Revere, Saugus, Somerville, Stoneham, Wakefield, Waltham, Watertown, Weymouth, Winchester, Winthrop and Woburn.

Sections 132 to 136, inclusive, of chapter 140 of the General Laws, as appearing in the Tercentenary Edition, provide that in towns, other than those previously listed, accepting the provisions of section 132 to 136, inclusive, of chapter 140, the emission of smoke within a quarter of a mile of a dwelling is a nuisance unless such emission is under a permit which may be granted annually by the aldermen of cities or the selectmen of towns. In such cities and towns proper persons are designated by the mayor or the selectmen to enforce the provisions of sections 132 to 136, inclusive.

A count of the number of cities and towns in the Commonwealth outside of the Metropolitan smoke abatement district and exclusive of Barnstable, Dukes and Nantucket counties, that have availed themselves of the provisions of sections 132 to 136 of chapter 140 shows that six cities and seven towns have either accepted the provisions of this chapter or have instituted similar smoke abatement programs, while 11 cities and 191 towns have not given attention to smoke abatement. Eight cities and 77 towns did not respond to the inquiry.

In the opinion of the Technical Committee on Sanitation, sufficient power has been granted by the Legislature to the cities and towns in the Commonwealth to regulate the nuisance of smoke emission in so far as objectionable conditions within each city and town are concerned. However, occasionally, the emission of smoke within one city or town affects the residents of another. Then education of the authorities to effect a mutual agreement between the cities and towns to set up joint smoke abatement programs is necessary. By such means it may be

possible to control in metropolitan areas the emission of smoke that affects residents of more than one city or town.

However, the Technical Committee recommends that state authorities interested in the abatement of smoke should advise authorities in cities or towns as to the desirability of developing joint smoke abatement programs whenever the emission of smoke from the stacks in one city or town affects the residents of another. No new legislation appears to be needed.

Sanitarians.

QUALIFICATIONS OF SUPERVISING SANITARIANS, SANITARIANS, AND INSPECTORS IN THE FIELD OF ENVIRONMENTAL SANITATION.

Sanitation workers constitute the second largest group engaged in public health activities in official health departments. They are employed by state, county, district and municipal health departments. Their work more than that of any other group, except public health nurses, brings them into close daily contact with the general public and, consequently, the quality of their service has an important influence on the public's judgment of the entire department.

In the past, when inspection and enforcement of the sanitary code were the only functions of the sanitary worker, the only training required was a knowledge of the code to be enforced. More recently, however, with the advances in sanitary science, modern health departments have had to broaden their function to include many phases of community life formerly not considered. To perform the required tasks, workers are now needed who not only know the enforcement aspects of the work, but also possess the technical background, together with an understanding of methods of dealing with and educating the public.

Under present conditions, entrance requirements for many positions in the field of environmental sanitation

are grossly inadequate. This ultimately creates an unfortunate situation for both employer and employee, and results eventually in a dissatisfied public and an inefficient health department detrimental to the people. The following standards are, therefore, proposed by the Technical Committee on Sanitation as a means for supplying personnel who possess a sufficient training and educational background successfully to carry out a modern program in environmental sanitation.

1. *Classification of Personnel.*

In the field of environmental sanitation, except sanitary engineering, occupational hygiene and laboratories, there shall be —

(a) On the state, county or district level only two professional classifications: (1) *sanitarian* and (2) *supervising sanitarian*.

(b) On the municipal level likewise two professional classifications: (1) *sanitarian* and (2) *supervising sanitarian*; but in cities and towns with a population greater than 25,000 an additional sub-professional grade: *inspector*.

The basic classification in all cases shall be that the sanitarian inspectors employed at the municipal level shall in all instances be under the immediate supervision of a sanitarian, supervising sanitarian or a sanitary engineer.

2. *Definitions of Occupational Classification and Duties.*

Inspector. — An apprentice or routine worker in some particular phase of environmental sanitation (milk, food, housing, etc.) with no supervisory duties. He shall carry on only routine work and this under direct guidance.

Sanitarian. — A health educator with a broad basic training in the physical and biological sciences, supplemented by specialization in the sanitary sciences and technology. He shall be employed to carry out educational and inspectional programs.

Supervising Sanitarian. — A sanitarian with three years of full-time experience in a state, county, district or municipal health department. He shall administer, develop and direct programs in environmental sanitation.

3. *Minimum Requirements for Employment.*

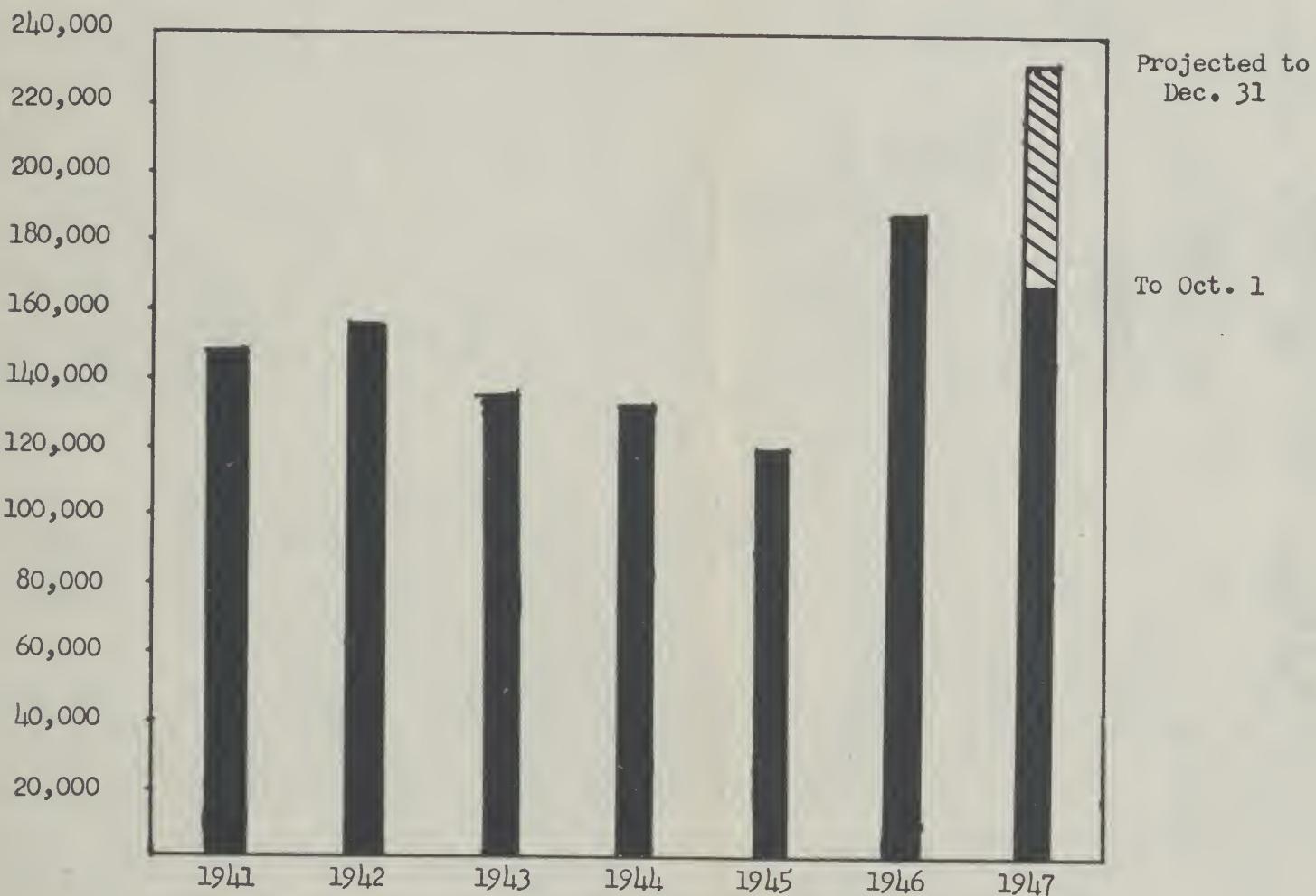
Inspector. — Two years of full-time employment in an industry in which experience would be applicable to the type of inspection involved. High school graduation may be substituted for employment in industry on the basis of two years of high school for one year of experience.

Sanitarian. — Four years of experience in the field of environmental sanitation as a full-time employee of a state, county, district or municipal health department. This experience shall have been accumulated during the five-year period immediately preceding appointment and before January 1, 1955. Education in a recognized college involving specialization in the field of environmental sanitation may be substituted year for year for experience. Education is a recognized college involving only the study of basic sciences may be substituted on the basis of two years of college for one year of experience. Graduate study of environmental sanitation in a recognized college may be substituted on the basis of one year of postgraduate work for two years of experience.

Supervising Sanitarian. — A sanitarian with three years of full-time experience as a sanitarian in a state, county, district or municipal health department.

DEPARTMENT OF PUBLIC HEALTH
DIVISION OF BIOLOGIC LABORATORIES

Figure 4.
DISTRIBUTION OF BIOLOGIC PACKAGES
1941 - 1947 incl.



PREVENTABLE DISEASES.

In the field of communicable diseases the Massachusetts Department of Health offers an example of superior service in the matter of prevention and control.

Biologic Laboratories.

The Division of Biologic Laboratories manufactures and distributes to the medical profession therapeutic agents such as diphtheria antitoxin, diagnostic agents for the susceptibility to diphtheria and tuberculosis, prophylactic agents against smallpox, diphtheria and typhoid, as well as blood and blood products. New products are manufactured and supplied as their value becomes established. This service to the community through the medical profession offers the taxpayers of the Commonwealth an immense saving in money, assures the highest standard of products, and makes readily available these materials so essential to the health of the people. In addition, the Division carries on research for the purpose of improving on these products, offers free instructions in this field through lectures and demonstrations, and is at all times ready to give free consultation advice on the use and abuse of its many diverse products and the precautions to be followed in their administration.

The Division of Biologic Laboratories is an outgrowth of the program for production and distribution of diphtheria antitoxin, begun by the State Board of Health in 1894. Since that time numerous other serums, vaccines and similar products have been prepared and furnished for the control of communicable disease. In 1915 the laboratory was organized as the Division of Biologic Laboratories of the reorganized Department of Health, and in 1945 the Legislature authorized the institution of a state-wide program for the collection of voluntary blood donations, and the processing of such blood as whole blood, blood plasma and plasma fractions, such products to be distributed without charge throughout the State.

in so far as supplies permitted. A large private grant made possible the erection of a Blood Processing Laboratory as an addition to the existing Antitoxin and Vaccine Laboratory building. The blood program began operation in December, 1945, and was the first comprehensive civilian blood program undertaken anywhere. On March 1, 1948, the American Red Cross assumed entire responsibility for the collection of blood and financial responsibility for the laboratory phase of this program. Beginning in the fall of 1948 the Red Cross acquired priority in use of the fractionation facilities, for pilot studies in this field.

A major activity of the Division since its inception has been to develop improvements in biologic products, and to develop new products where clear-cut needs existed. Thus the development of a serum for treatment of influenzal meningitis and of an inexpensive serum (placental extract) for control of measles was carried out by collaboration with near-by medical school laboratories. The entire war-time study of plasma fractionation was based on a similar collaborative arrangement, and led to the first production of normal human serum albumin and immune serum globulin anywhere in the world.

The functions of the Division may be divided for convenience into three major categories:

1. *Services.* — Production and distribution of biologic products and related drugs or articles for public use.

2. *Research.* — Development of modifications in products prepared, or in testing methods employed; development of new products; and basic chemical or biological investigations on mechanisms underlying the actions of biologic products.

3. *Teaching.* — In-service training of employees or visiting technicians; lectures, talks, articles, etc., for professional or lay persons; consultation for medical and related professions.

Although the Division provides much of what is needed in each category, there exist unmet needs with which the Division, as at present organized and financed, is unable to cope.

1. SERVICES.

The Division has been greatly hampered in the provision of tetanus toxoid and pertussis vaccine, due to the inability to secure competent supervising bacteriologists at present salary levels and under present civil service regulations. Very many requests have been received for both products, either singly or mixed with diphtheria toxoid; provision of these products singly or in combination has become the accepted and recommended practice in a large proportion of the health areas of this country. The inability in this State to furnish such mixtures is a triple liability, viz.: (a) tetanus toxoid and pertussis vaccine are not available; (b) the one available product in the group — diphtheria toxoid — is undesirable to those agencies or physicians wishing mixed antigens; and (c) the Division operates inefficiently, since it has and maintains a plant capable of furnishing these products, with all the attendant overhead, but cannot distribute this overhead as widely as would be possible if other useful products could be added to the services which it now provides. It must be emphasized that the provision of pertussis vaccine and tetanus toxoid will incur no great additional expense, but that it is imperative that the manufacture and distribution of such products, new to the laboratory, be carried out under the supervision of personnel of the highest level of ability. A bacteriologist, now in charge of tetanus toxoid production, was secured in 1948, but it is confidentially known that he is looking for another position at a higher salary; the same is true of the chemist member of the staff. Higher salaries must be provided if competent personnel is to be obtained and permanently employed.

The greater Boston diphtheria outbreak of 1946–1947, and the smallpox outbreak in New York City in April, 1947, strained the Division beyond the limit of its capacities to meet such emergencies. If sufficient funds and personnel had been available during recent years, reserves

of products needed in such emergencies could have been accumulated. Such reserves should be accumulated for possible future emergencies, but this can be done only if adequate expense funds and personnel are available.

There is a need to develop an adequate and comprehensive convalescent and hyperimmune serum program, combining modern techniques of donor procurement with modern techniques of blood fractionation.

Without opportunities for research, the character of the work of the laboratory deteriorates; with such opportunities, the workers are inspired to attain higher and higher standards and are enabled to appreciate the practical value of the scientific procedures that constitute part of the laboratory routine. For those reasons, expenditure for research is an economy.

2. RESEARCH.

As examples of research problems of immediate urgency in the Division of Biologic Laboratories, the following may be cited:

1. Purification of diphtheria toxoid.
2. Preparation of a toxin-antitoxin mixture, using human serum as the source of antitoxin.
3. Continued studies on diluents and preservatives for Schick toxin, to eliminate occasional false positive reactions.
4. Continued studies on alcohol fractionation and on enzyme digestion of diphtheria antitoxin.
5. Continued studies on evaluation and interpretation of the Schick test.
6. Investigations relative to application of known methods of preparing detoxified typhoid antigen, and exploration of possibility of substituting such antigen for present vaccine.
7. Studies and comparison of the biological properties of various strains of smallpox vaccine. Performance of pilot studies on preparation of smallpox vaccine on fertile hens' eggs.

8. Performance of pilot studies on production of influenza vaccine and BCG.
9. Development of improved methods of preparing blood grouping sera from routine plasma supplies.
10. Continued studies on fractionation of outdated plasma.
11. Development of a method for obtaining consistent high yield of antihemophilic globulin.
12. Study uses of by-products of plasma fractionation, specifically in fractions I, III, IV-1 and IV-7.

Aside from the specific needs cited above, the products of this and any other biologic laboratory are subject to frequent and unpredictable variations, especially in potency but also in safety. To unravel the causes of these variations and thereby to assure the provision of products of the highest quality, is basically a problem in research. Thus the successful and efficient operation of the laboratory hinges upon maintaining the highest possible research standards, both in personnel and in equipment. The principle has long been recognized in industry and elsewhere, but requires especial emphasis where a state institution is concerned. This is because many of the administrative policies of the State work against effective research, and thus impair the functions of the laboratory. To correct these difficulties, and make possible the advances summarized above, some additional funds are needed; but above all, there is an acute need of revision of the conditions under which professional grade personnel is procured and retained in service; for it is only under the direction of such personnel that these problems can be successfully met.

3. TEACHING.

The teaching function of the laboratory has grown up primarily because of the unique facilities which the laboratory has long offered to those who wanted to combine formal studies with laboratory work. However, the laboratory itself gains continually by teaching contacts and activities, since visiting workers and students

are usually of superior calibre, and thus bring to the laboratory a knowledge of methods employed to advantage elsewhere, which could not be gained otherwise without extensive travel. In-service training of laboratory personnel, however, has been neglected to some extent at the laboratory, since it requires a degree of effort and organization which is beyond the capacity of the present limited staff. Such training would be of inestimable value to the Division in the increased quality of service which it would engender. A beginning in this direction has been made, but it can be carried out properly only if the present difficulties in procurement of professional personnel are solved.

Economies in purchasing and in operation of the laboratories could be achieved; operations common to more than one laboratory could be consolidated; personnel temporarily inactive at their normal assignment could readily be shifted to other assignments where the load had temporarily increased; a common heating and utility plant could be installed with considerable saving; and many minor gains (*e.g.*, pooled library services) would ensue if all the laboratories in the Department were placed in a single division in contiguous buildings.

The standards of performance of routine and of investigative work would be raised and the *general administration and organization of the laboratory services* would benefit from this.

In order to accomplish the objectives and to meet the unmet needs outlined above, the following steps are recommended:

1. *Increase expense budget of the Division.*
2. *Increase salaries of specialized professional personnel.*
3. *Revise the personnel organization of the Division.*
4. *Modernization of the laboratory plant.*
5. *Consolidation of all laboratories in the Department into a Division of Laboratories.*

RECOMMENDATIONS.

1. Prepare and distribute pertussis vaccine.
2. Prepare and distribute tetanus toxoid.

3. Prepare and distribute mixtures of diphtheria toxoid with tetanus toxoid, pertussis vaccine, or both.
4. Accumulate emergency reserves of diphtheria toxoid and smallpox vaccine (unlike most prophylactic agents, these products require many months to prepare and test).
5. Modernize the technical equipment of the Division for —
 - (a) Performance of animal tests for safety and potency of serums and vaccine.
 - (b) Purification of serums and vaccines.
6. Provide facilities for research on purified diphtheria toxoid and other diphtheria control products; elimination of reaction-producing substance in Schick toxin, typhoid vaccine, diphtheria antitoxin, and other products; improving potency of smallpox vaccine; pilot production of influenza vaccine; uses for salvage red cells from human blood; improvement in quality and yield of established plasma fractions; uses of by-products of plasma fractionation; general factors involved in controlling safety, sterility and potency of all biologic products; field studies to evaluate products furnished by the Division.
7. Extend plasma fractionation program to supply needs of State for human immune serums.
8. Construct separate heat and utility plant.
9. Add second story to Blood Laboratory. Recommendations 8 and 9 may be achieved either by —
 - (a) Outright purchase from Harvard University of property rented by State in Forest Hills and construction of addition with State funds, or —
 - (b) Securing of private funds to be paid to Harvard University to defray expenses of construction.
10. Increase expense budget of Antitoxin and Vaccine Laboratory from \$40,000 to \$47,000. This may be accomplished by legislative approval (if granted for at least two successive years) of appropriations requested.
11. Revise personnel set-up of Division and adapt it to present needs, as follows:
 - (a) Establish a new junior chemist position.
 - (b) Reclassify one senior bacteriologist to chief bacteriologist.

(c) Review remaining positions with aid of expert personnel administrators.

(d) Increase salaries of all personnel 20 per cent.

(e) For professional personnel (1) substitute relative for absolute veterans' preference; (2) restore educational standards; (3) remove residence requirements; or as an alternative, place professional personnel under same status as State University faculty.

12. Investigate advisability of consolidating all the laboratories of the Department into one division.

Communicable Disease Prevention and Control.

An important function of the State Department of Health is the prevention and control of communicable diseases. While this is legally a local function, the State Department of Health assumes a much needed responsibility in initiating and furthering disease control programs, in making recommendations regarding minimum isolation and quarantine, and in bringing before the executive and legislative branches of the Commonwealth new legislation. It operates certain hospitals and clinics and licenses and investigates hospital facilities throughout the State. Added to this, the Department issues bulletins on "Communicable Disease Information" which keep the medical profession informed regarding the prevalence of epidemic diseases along with recommendations. The Department not only carries out investigations of epidemic diseases, but offers consultation service by telephone and sends out consultants on request. The Department guides public opinion through statements to the press and over the radio. Finally, through special studies the Department not only keeps abreast with the advancement of the medical sciences, but through its own investigations contributes to medical knowledge in this field.

The control and prevention of communicable diseases have always constituted one of the essential functions of health departments, — a function which will probably continue to be of paramount importance for many years to come. Experience has shown improved methods of

attacking the problem. The time is certainly past when the mere exercise of police powers through isolation and quarantine procedures can be thought effective in preventing the spread of infection. The effectiveness of future plans for communicable disease control seems much more likely to depend upon broadening the base of present immunization procedures to include additional diseases, increasing educational efforts to prevent the after effects of disease, particularly through educational home nursing service for such diseases as measles, whooping cough and pneumonia, and increasing the extent to which adequate laboratory aids and medical care are provided for such diseases. Since the Commission Report of 1936 was published, whooping cough immunization has been shown to be effective, and chemotherapy has greatly altered the situation in regard to pneumonia, meningococcal meningitis and streptococcal diseases.

The control of communicable diseases in Massachusetts is legally a local function, except that the Department of Public Health is authorized by special act of the Legislature to set up minimum isolation and quarantine regulations and is authorized to investigate and has an advisory capacity. In times of epidemics or threats of epidemics the Department of Public Health has co-ordinate authority with local boards of health. In view of the fact that the majority of the boards of health lack trained personnel, it has been necessary for the Department to assume considerable responsibility for the initiation of local disease control programs. This has meant that while most of the routine control measures have been carried on under local auspices, the Department has initiated and furthered procedures aimed toward a long-time control program, at the same time taking over unofficially the responsibility for some of the more specialized types of control practices. Thus the diphtheria immunization program, while developed independently in some communities, had to be fostered and even demonstrated under state auspices in the majority of Massachusetts cities and towns. The extent to which the de-

cline in communicable diseases is a reflection of official health activities is therefore due to a combination of state and local programs. The figures shown in Table 6 indicate that, although there may have been some division of responsibility, the resultant effect has been a substantial decline in these diseases, which is probably as great as is to be found in other parts of the country.

The program for the control of typhoid fever described in the 1936 report has been continued, and the disease is almost reaching the vanishing point. The serum treatment of pneumonia has been entirely replaced by chemotherapeutic agents and antibiotics. The studies of scarlet fever immunization failed to produce a satisfactory immunizing agent, but the importance of the disease has declined because of chemotherapy. The pioneer work on antirabic vaccination of dogs has been completely justified by later studies in the State and elsewhere, and the disease has practically disappeared.

In Table 6, the average death rates for five-year periods from 1871 through 1945 for eight of the more important communicable diseases are given. From this may be seen the consistent reduction in all rates except pneumonia which has been steadily declining only since 1916. During this seventy-five-year period the average death rate from these diseases has declined 88 per cent. During the five-year period 1941–1945, these diseases killed 4,371 persons per year. Had the average rates for the years 1871–1875 prevailed, they would have caused 37,000 deaths annually in the five-year period 1941–1945, or 32,629 more than actually occurred. During this period (1871–1945) the death rate from pneumonia (all forms) has declined 49 per cent; from tuberculosis (all forms), 91 per cent; whooping cough, 97 per cent; measles, 97.7 per cent; diphtheria, 99.5 per cent; scarlet fever, 99.7 per cent; typhoid fever, 99.9 per cent; and smallpox, 100 per cent. The remarkable reduction in deaths from smallpox, typhoid fever, diphtheria, tuberculosis and, more recently, whooping cough can be at-

tributed to known public health procedures; the reasons for the decline in deaths from scarlet fever and measles are less definite, but are probably due in large measure to more widespread and more nearly adequate medical care and a better understanding of the need for care during convalescence. The more recent downward trend in pneumonia is due largely to more efficient therapeutic agents, beginning with specific sera which more recently has been replaced by chemotherapeutic and antibiotic agents.

TABLE 6.—*Certain Communicable Diseases in Massachusetts.*

[Average death rates per 100,000 population.]

DISEASE.	1871-1875	1876-1880	1881-1885	1886-1890	1891-1895	1896-1900	1901-1905
Diphtheria	.	.	.	63.4	158.7	83.6	63.7
Measles	.	.	.	14.5	8.5	10.4	47.5
Pneumonia (all forms)	.	.	.	146.6	139.7	160.4	197.5
Scarlet fever	.	.	.	85.9	40.9	26.6	163.8
Smallpox	.	.	.	26.6	1.2	1.3	179.0
Tuberculosis (all forms)	.	.	.	413.0	371.6	385.0	347.9
Typhoid fever	.	.	.	82.1	45.1	49.7	41.6
Whooping cough	.	.	.	19.8	17.3	12.9	13.4
Total	.	.	.	851.9	783.0	742.3	678.2
DISEASE.	1906-1910	1911-1915	1916-1920	1921-1925	1926-1930	1931-1935	1936-1940
Diphtheria	.	.	.	21.8	16.9	17.1	13.2
Measles	.	.	.	6.8	5.9	9.6	6.0
Pneumonia (all forms)	.	.	.	177.6	170.6	205.8	123.8
Scarlet fever	.	.	.	8.0	5.7	3.5	3.8
Smallpox	.	.	.	0.1	0.1	0.1	0.01
Tuberculosis (all forms)	.	.	.	195.9	145.0	137.4	89.9
Typhoid fever	.	.	.	13.5	7.7	3.7	2.1
Whooping cough	.	.	.	9.2	7.1	11.5	7.0
Total	.	.	.	432.9	359.0	388.7	245.8
DISEASE.	1941-1945	1946-1950	1951-1955	1956-1960	1961-1965	1966-1970	1971-1975
Diphtheria
Measles
Pneumonia (all forms)
Scarlet fever
Smallpox
Tuberculosis (all forms)
Typhoid fever
Whooping cough
Total

REPORTING.

The reporting of cases of communicable disease is still not complete, but is unquestionably continuing to improve. The changes in legislation relative to reporting recommended in the 1936 Report have become law. It is recommended that boards of health be urged to receive and act upon telephone reports of cases or suspected cases of communicable disease.

ISOLATION AND QUARANTINE.

Much of the confusion in regulations regarding isolation and quarantine has been dispelled by the legislation giving the Department authority to adopt uniform regulations. These have been made minimum regulations, local boards of health being permitted to make more stringent ones. Only in a few instances have they taken advantage of the privilege.

In many towns the expense of publishing and printing regulations has been so costly that some boards of health have been deterred in abolishing old regulations and adopting new ones. It is no longer necessary, however, for communities to pass isolation and quarantine regulations. They may merely publish a statement that old regulations have been abolished and that the local boards of health are now abiding by the regulations promulgated by the State. This we believe will bring about a rapid change in towns, many of which have not abolished old isolation and quarantine regulations, and many physicians are still puzzled as to what regulations are actually in force.

FINANCIAL RESPONSIBILITY FOR COMMUNICABLE DISEASES.

The General Laws still provide that charges incurred by boards of health in the care of cases of communicable diseases shall be borne by the patient or his family if financially able, and otherwise by the board of health of the community of settlement or by the State in non-

settled cases. This principle of placing financial responsibility upon the community of settlement, while logical in many respects, is equally illogical in cases of acute communicable diseases. Such a disease is contracted because of conditions peculiar to the community of residence,—conditions over which the place of settlement, from which the patient may have been absent for three or four years, has no control. Hospitalization or other quarantine charges are for the benefit of the patient as well as to prevent the spread of the disease in the town of residence. Thus the community of settlement is frequently in the anomalous position of having to pay charges for conditions for the prevention of which it was helpless, the benefit for these expenses accruing to another community. In many instances boards of health have been forced to spend the major portion of their hospitalization budget for the care of these patients in other towns. It is therefore recommended that financial responsibility for cases of diseases dangerous to the public health be borne by the board of health of the community exercising quarantine or other administrative supervision over the patients. Exception should, of course, be made for cases of tuberculosis to prevent infected persons from shifting residence merely in hopes of obtaining aid from a different community. If, however, legislation proposed in Appendix 3 be enacted, this exception would be unnecessary. This situation would not arise with respect to the acute communicable diseases of short duration. Such a change would place financial responsibility where it logically belongs and would eliminate much of the "red tape" not required.

HOSPITALIZATION.

Hospitalization of patients with communicable disease serves a dual purpose,—the care of the patient and the prevention of secondary infections among the patient's contacts. The former requires not only proper hospital administration and a competent medical staff, but also qualified resident medical personnel. The extent to

which it prevents secondary home infections varies according to the standards utilized in selecting cases for such care. Studies in England show that hospitalization of all recognized cases does not achieve the ideal of absolute control of these diseases. The selection of patients for such care should therefore be determined by the special medical needs and the extent to which home conditions may prevent adequate protection of the patient's contacts. Hospitalization of certain of the minor communicable diseases serves no useful purpose, as the patient's condition does not usually require such care nor is it effective in preventing spread. The removal of isolation and quarantine requirements for these diseases as recommended above would automatically eliminate much necessary hospital care, thus releasing beds for persons with other more serious diseases.

The relations between communicable disease hospitals and official health agencies must inevitably be closer than between general hospitals and other official bodies. It is therefore recommended that to promote the closest co-operation between health services and isolation hospitals the state or local health department should be represented on the advisory board of such institutions.

As has been emphasized above, one of the purposes of communicable disease hospitalization is the prevention of spread of the disease to other persons. It is self-evident that such care serves this purpose only if the patient remains in the hospital until danger of conveying the disease to other persons has passed. Board of health regulations are based on this principle. Yet a serious health program is often presented by the tuberculous patient who may insist on returning, while still in an infectious stage, to his family, where there are often small children. Similar problems arise from time to time with certain cases of gonorrhea or syphilis. It is therefore recommended that hospitals caring for such cases be enabled to detain patients upon approval of the board of health until the danger of conveying the disease to others shall have passed.

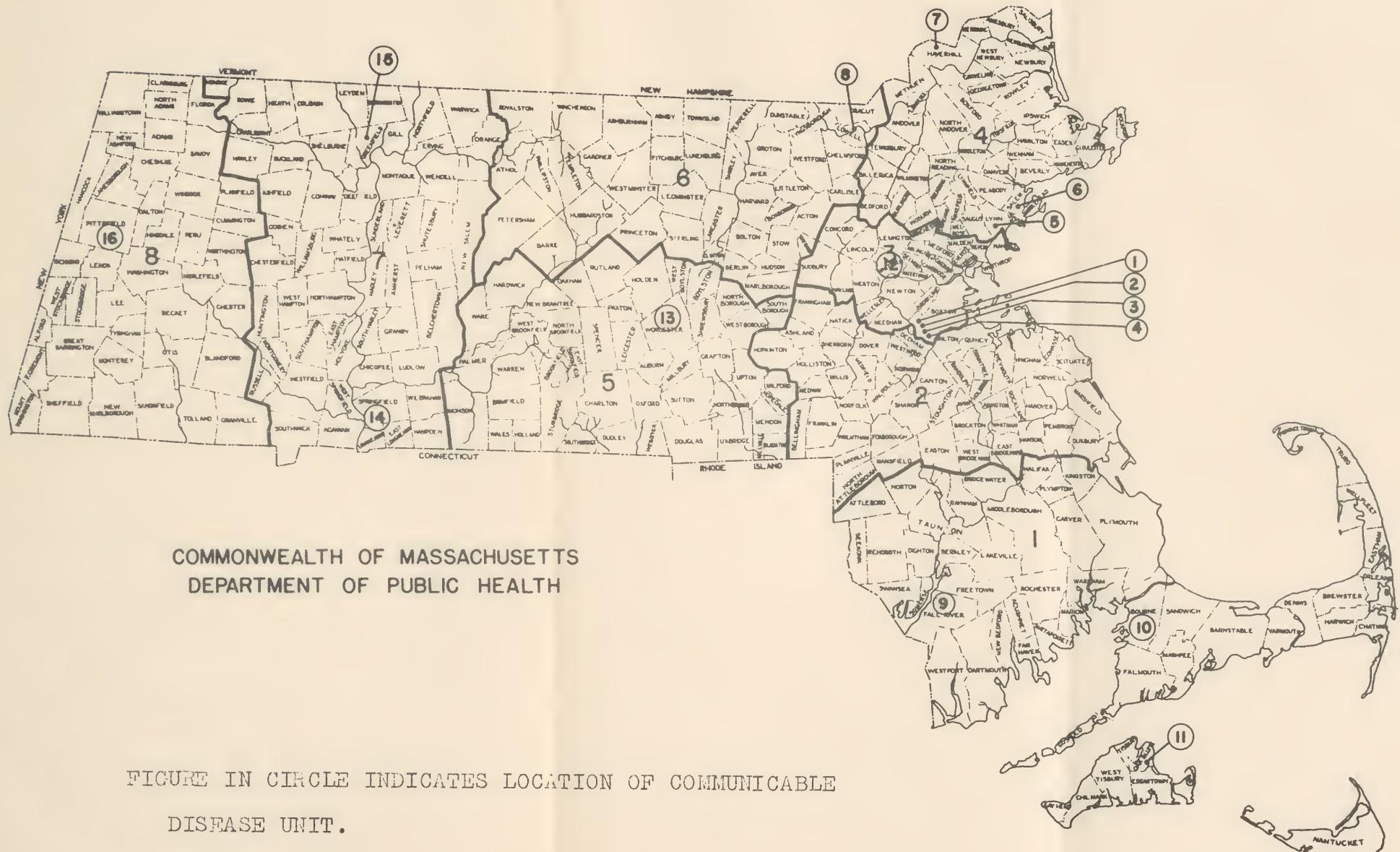
In Table 7, Communicable Disease Beds and their Location, is shown a summary of the facilities throughout the State. It does not, however, convey a proper idea of the facilities offered in these locations. In the report on communicable diseases preceding, it is stated that the cost of operating small local contagious units has become so costly that the tendency is to close these and make arrangements to have cases cared for in the larger units. This committee would point out that it is not only the rising cost which causes the closing of these smaller units, but that the care of severe cases of communicable disease and their more serious complications require not only expensive facilities, but experienced and specially skilled hospital personnel. It is the recognition of this fact which creates the present demand of larger, centralized units for infectious diseases. Indeed, the Haynes Memorial has changed its name from a communicable disease department to an infectious disease department to give it the proper name for its wider scope of service. This same thing applies to the scope of the other larger units in the State.

While this report on communicable diseases stresses that the minor communicable diseases can often be taken care of adequately at home, it fails to bring out that there are many educational institutions in this State with very limited means in their infirmaries of taking care of communicable diseases. Consequently, these larger units must be of sufficient bed capacity to take care of this added student population. Massachusetts as a great educational center must afford adequate communicable disease beds not only for its permanent population, but, in addition, to care for students out-of-State, when it is realized that crowded classrooms offer great opportunity for the spread of air-borne infections. The desirability of state support for these larger units for the care of infectious diseases becomes apparent. State support of the larger units is desirable.

If such support is not possible under the present laws of this State, it is the opinion of this committee that the

Figure 5.

Communicable Disease Units in Massachusetts



Commonwealth will, in time, erect and operate hospitals for communicable diseases other than tuberculosis, because they will be of the same value as tuberculosis and mental hospitals in safeguarding the public and affording good medical care. The present statute which demands that each town arrange for adequate care for diseases dangerous to the public health was conceived at a time when hospitalization was decreed as a protective measure — a mere concentration camp, rather than as an institution to get people well. It is this newer aspect of hospitalization which has made these smaller communicable disease units too costly for small towns to operate.

TABLE 7.—*Communicable Disease Beds and their Location.*

COMMUNICABLE DISEASE HOSPITAL.	Location.	Number of Beds.
1. South Department, Boston City	Boston	294
2. Haynes Memorial, Massachusetts Memorial	Boston	150
3. Massachusetts General	Boston	10
4. Children's Hospital	Boston	19
5. Lynn Health Department Hospital	Lynn	75
6. Salem Health Department Hospital	Salem	52
7. Hale Municipal Hospital	Haverhill	5
8. Lowell Isolation Hospital	Lowell	30
9. Fall River General Hospital	Fall River	40
10. Barnstable County Sanatorium	Bourne	7
11. Martha's Vineyard Hospital	Oak Bluffs	4
12. Waltham Hospital, Waltham	Waltham	31
13. Belmont Hospital	Worcester	100
14. City of Springfield Health Department Hospital	Springfield	50
15. Greenfield Isolation Hospital	Greenfield	20
16. Sampson Memorial Hospital	Pittsfield	30
Beds available but not in use at present:		
New Bedford Isolation Hospital	New Bedford	36
Newton-Wellesley Hospital	Newton	50
Jordan Hospital	Plymouth	-1

¹ Not used for several years.

HOME NURSING OF COMMUNICABLE DISEASES.

It has been pointed out above that hospitalization of all reported cases of communicable diseases is neither warranted nor desirable. Experience shows that there are advantages in caring for some diseases, such as measles and whooping cough, in the home rather than in hospitals. It is desirable, however, that in these and certain other communicable diseases, facilities for home nursing care should be available both for the better care of the patient and for instruction of the family so as to prevent spread. Such nursing service must, however, be most carefully supervised lest it jeopardize other parts of the community nursing service. It is therefore recommended that home nursing service for cases of communicable diseases be provided by health agencies and nursing associations subject to rules and regulations promulgated by the Department.

IMMUNIZATION.

The control of communicable diseases through widespread use of immunizing procedures is a field the possibilities of which have been but slightly explored. The striking results achieved in smallpox and diphtheria prevention have indicated the potential value of this type of disease control, and have naturally raised hopes of future extension of comparable measures to the prevention of other diseases. So extensive are the studies still being conducted in this field that any statement made in this report must be considered as being merely currently applicable. As the scope and knowledge of immunization procedures increase, these statements will be subject to revision.

Programs for vaccination against smallpox and immunization against diphtheria must continue to be vigorously carried on in all communities, such protection to be given preferably before children reach the age of one year. Although it is not economically advisable for a community to carry on post-immunization Schick tests for all children as a community measure, the importance of these tests as individual procedures should be stressed.

Immunization against scarlet fever, typhoid fever and rabies is desirable for certain groups of persons. The decision as to those who should be so protected should be left to physicians and health authorities who must interpret the needs in the light of individual circumstances.

Passive immunization against diseases for which such measures seem practical, such as measles and diphtheria, together with such other diseases as may later be added to the list, should be encouraged under certain conditions and for certain groups, but not as general health procedures.

The Commission believes that health departments have a definite responsibility to make certain that adequate programs for protecting children against smallpox and diphtheria are carried on each year throughout the areas under their jurisdiction. Materials and facilities for this purpose should be made readily available. While health departments should make every effort to encourage the rendering of this service by private physicians, the responsibility for adequate protection of the community against these diseases rests with the official health agency. The increase in diphtheria in 1946 and 1947 is evidence that our immunization programs must be pushed with greater vigor.

No program for protecting young children against smallpox and diphtheria can hope to be completely successful without well-planned and well-executed educational programs. Although such programs require the co-operation of all the agencies interested in the health of the community, the primary responsibility for assuring continued educational effort rests with the Health Department. The value and importance of the nurse's services in such work cannot be overemphasized. Adequate records are of equal importance in the formulation of immunization programs, as they serve to indicate those areas where most intensive work is needed. Such records should be kept in each community and should include the name, address and age of the child, the date of immunization, the immunizing agent and lot number. Reports should be made annually to the Department of Public Health.

Although the difficulty of obtaining accurate or complete information on children immunized outside of clinics is recognized, continuous effort should be made to obtain such information.

RABIES CONTROL.

The long struggle to change the law and transfer the power of setting up area-quarantine for rabies, from the local communities to a state agency, was abandoned in 1934 and dependence thereafter was placed upon anti-rabic vaccination dogs.

The co-operation of local boards of health in holding dog immunization clinics and of city councils and boards of selectmen in passing restraint orders upon unimmunized dogs has made it possible to eliminate the disease temporarily from the State. Unless immunization of dogs is vigorously pushed, the disease is sure to increase in prevalence once more.

Unless the disease again becomes prevalent despite inoculation of dogs, no further effort need be made to give a state agency power of setting up area quarantine of dogs.

ACCOMPLISHMENTS SINCE THE 1936 REPORT.

Some of the legislation recommended in the 1936 Recess Commission Report has now become a law. The Department of Public Health has been given authority to adopt the regulations for the control of communicable diseases (recommendation 1); the state laws as to maritime quarantine have been repealed (recommendation 2); the power of appointment of local animal inspectors has been transferred to boards of health (recommendation 9); and the number of statutes pertaining to communicable diseases have been clarified and brought up to date (recommendation 11). Some of the recommendations made have not yet been accomplished and others only in part. Those which should still be acted upon are as follows:

RECOMMENDATIONS.

1. That financial responsibility for care of communicable diseases, except tuberculosis, devolve upon the municipality having jurisdiction over the patient rather than the community of legal settlement.
 2. That boards of health be given the right to retain in hospitals persons having a communicable disease, if necessary for the protection of the community.
 3. That home nursing services be provided for cases of communicable diseases.
 4. That health departments be responsible for the conduct of adequate programs for vaccination against smallpox and immunization against diphtheria.
 5. That additional diseases be included in the program of present immunization procedures.
 6. That educational home nursing services for such diseases as measles, whooping cough and pneumonia be increased, and that more adequate laboratory aids and medical care be provided for such diseases.
 7. That boards of health still retaining obsolete isolation and quarantine regulations be urged to abolish these and abide by those promulgated by the State Department of Health.
 8. That adequate records be maintained on the immunization of every child.
 9. That isolation and quarantine regulations for certain of the minor communicable diseases be abolished.
 10. That state and local health departments be represented on the advisory board of isolation hospitals.
- As regards the recommendation contained in this report on communicable diseases, and in the following report on tuberculosis, that the existing statutes be amended to allow forcible hospitalization of patients with diseases dangerous to the health of the community, this committee favors such legislation in principle, but urges that the wording of such future legislation shall not jeopardize the inalienable rights of the individual. The advice

of the legal department should be sought in this attempt to protect the community. This committee feels that the power to confine such a patient should be granted through the local judiciary as in the commitment of mental cases.

This same applies to any legislation designed to give a local board of health the right to examine a person suspected of having a disease dangerous to public health.

Tuberculosis Control.

INCIDENCE OF TUBERCULOSIS.

The course of tuberculosis mortality in Massachusetts since 1871 is shown in Table 6 under "Communicable Diseases." It will be noted that the decline in death rate began before any control measures were undertaken and continued at a remarkably uniform rate up to 1938. Since that time, however, there has been practically no change in the mortality rate, and the year 1943 showed an increase of 12 per cent over the preceding year. The year 1947, with a rate of 34.4, marks the first definite decline in the past ten years. The death rate among women has dropped significantly faster than among men, and in 1945 the ratio of male to female deaths was 2.1. The death rate from extrapulmonary forms of tuberculosis has fallen more rapidly than that from pulmonary tuberculosis, and at present makes up only about 5 per cent of the total mortality.

Table 8, giving allocation of tuberculosis deaths to usual place of residence, indicates how much the official rates have been influenced by deaths in sanatoria in other counties, and brings out sharply the true variations in death rates in different sections of the Commonwealth. The influence of tuberculosis mortality in Suffolk County on the rate of the State as a whole is clearly indicated.

In spite of marked recent improvement in diagnostic services, barely two new cases are reported annually

TABLE 8.—*Deaths from Tuberculosis by Counties, 1947.*

[From Division of Vital Statistics, Office of Secretary of State.]

COUNTY.	Deaths from Pulmonary Tuberculosis.	Deaths from Tuberculosis (Other Forms).	Total Deaths from Tuberculosis.	Death Rate per 100,000 Population.
Barnstable . . .	6	—	6	15.4
Berkshire . . .	23	4	27	20.7
Bristol . . .	149	6	155	40.8
Dukes . . .	—	—	—	—
Essex . . .	132	14	146	27.5
Franklin . . .	12	1	13	25.0
Hampden . . .	93	6	99	27.4
Hampshire . . .	20	3	23	31.4
Middlesex . . .	280	9	289	27.6
Nantucket . . .	—	—	—	—
Norfolk . . .	67	3	70	18.5
Plymouth . . .	38	4	42	22.6
Suffolk . . .	535	27	562	65.3
Worcester . . .	140	12	152	28.7
For entire state . .	1,495	89	1,584	34.6

per death. This ratio is influenced by the fact that only active cases are considered reportable in Massachusetts, whereas all cases with lesions considered to be tuberculous by X-ray are now reported from mass surveys in many other States. However, intensive work has shown that from 3 to $3\frac{1}{2}$ cases per death should be reported if there is adequate diagnosis and reporting of the disease. This ratio should be maintained if we are to find any substantial proportion of early tuberculosis. Even now approximately 15 per cent of all cases are not reported until after death, and 55 per cent of all fatal cases are first reported within six months of death.

In Table 9 the distribution of tuberculosis deaths by sex is given. Tuberculosis has become a disease of older men.

TABLE 9.—*Tuberculosis Deaths by Sex in Massachusetts.*

TYPE.	Sex.	CALENDAR YEAR.	
		1921.	1947.
Pulmonary . . .	Males	1,743	1,051
	Females	1,529	444
	Total	3,272	1,495
Extrapulmonary . . .	Males	311	42
	Females	284	47
	Total	595	89
All forms . . .	Males	2,054	1,093
	Females	1,813	491
	Total	3,867	1,584

DIAGNOSTIC FACILITIES.

The General Laws require every city of 50,000 or more, and permit other communities, to maintain tuberculosis dispensaries. Twenty-six communities, chiefly the larger cities, now conduct such clinics. With the requirement of X-ray facilities for even the smallest clinic the importance of providing equipment and trained medical services for these clinics is apparent. To meet the situation section 85C, chapter 111 of the General Laws, authorizes state and county sanatoria to maintain diagnostic outpatient departments, and at the request of towns or groups of towns to furnish diagnostic service through the members of their medical staffs. In the development of this program state and county sanatoria are now operating 32 consultation clinics located in the outpatient department of general hospitals or in board of health offices where X-ray equipment can be made available. This arrangement does not, of course, relieve local boards of health of their responsibility for furnishing adequate public health nursing service, accurate records and general supervision of their respective cases. Such local services, including the examination of family con-

tacts, constitute a vital factor in effective tuberculosis control.

For the past fifteen years the Department, with the assistance of the Massachusetts Tuberculosis and Health League, has sponsored a program for the routine X-ray examination of teachers and other school employees at the time of employment and at suitable intervals thereafter. To date, the school committees in 84 cities and towns have adopted such regulations. In 1947 a bill was introduced in the Legislature to make such examination of school personnel mandatory. This bill was supported by the boards of education, many of the teacher organizations and the voluntary health associations, but failed of enactment. Support of this bill reintroduced at this time (Appendix 19) is urgently requested by this committee for the protection of school employees as well as pupils.

Section 87CC, chapter 112, as amended by the Acts of 1941 and by Acts of 1943, requires that hairdressers and beauty shop operators, before engaging in practice and every twelve months thereafter, shall procure from a physician a certificate stating that they are not afflicted with tuberculosis in a communicable form.

Because only a small proportion of tuberculous patients come to physicians' offices and clinics in the early stages of the disease, it has been necessary to extend the use of routine X-ray examinations of persons in the most susceptible age groups. With the present low incidence of tuberculosis among grade school pupils, mass examination was found to be an unproductive method of case finding there, and the program has been shifted to the older age groups. In the fall of 1943 the Department purchased its first mobile photoroentgen unit, and now has three such units for the routine examination of industrial employees, and for community surveys of persons fifteen years of age and over. For the year ending June 30, 1947, these clinic units X-rayed 148,872 persons, and made a diagnosis of pulmonary tuberculosis in 1,589 instances. This has been made possible chiefly through

the use of federal grants-in-aid, and most of the work has been accomplished, not through state appropriations, but rather through money, made available from the federal government and local tuberculosis leagues.

Re-examination and follow-up of positive and suspicious cases found in community surveys is quite as important as the initial screening. All such cases are referred to the family physician for confirmation, and at the same time to the district health officer to see that a final report is received.

During the winter of 1947-1948 the Department examined with one of its new 70 mm. photoroentgen units the inmates and employees of the institutions of the Departments of Mental Health, Correction and Public Welfare.

Under grants-in-aid from the United States Public Health Service beginning in 1945, the Department has extended its mobile clinic program, and has made sub-grants to five local health departments, three county sanatoria, and eleven local hospitals to further the Massachusetts mass case-finding program. With these facilities and the possible addition of two or three more mobile photoroentgen units it should be possible to examine all adults in the State within a period of five years, the maximum time considered essential for the discovery of incipient tuberculosis if the additional spread of infection is to be limited.

HOSPITAL FACILITIES.

In 1938 there were 4,550 beds available in state, county and municipal sanatoria. Due to the closure of beds in private sanatoria and the conversion of beds for tuberculosis in children to other purposes the total has now fallen to 3,699. There are, however, 651 beds at the Veterans' Administration Hospital in Rutland occupied by Massachusetts veterans, and 650 beds in the institutions for mental diseases used for tuberculosis inmates. There are, therefore, enough beds available in governmental units to meet the desirable quota of $2\frac{1}{2}$ beds per each annual death.

Even more disturbing is the high proportion of vacant beds in existing sanatoria at a time when there has been no reduction in the deaths. During the war this failure to utilize available beds was due to high wages in industry and overtime work. In the past three years, however, long waiting lists have developed on account of our inability to secure nurses, physicians and other essential personnel to staff the wards. This nursing shortage, which was first due to the enrollment of great numbers of nurses in the armed forces and Veterans Bureau, has become nation-wide and constitutes one of the greatest obstacles to the provision of adequate hospital facilities for the tuberculous everywhere. There still appear to be sufficient beds for the hospitalization of patients for whom application is received, but until nurses' salaries in sanatoria are raised to a level at least comparable with those in general hospitals, it will be impossible to utilize even the existing sanatorium facilities for the tuberculous.

Because a majority of the sanatoria in Massachusetts were built prior to 1920, many of the present plants are urgently in need of replacement. The Department has repeatedly requested appropriation for the reconstruction of the Rutland State Sanatorium, and has included recommendations for such reconstruction of the sanatorium, with relocation in the Metropolitan area, in its current building program.

To relieve the shortage of medical, nursing and other personnel it is essential that suitable living quarters be provided at once. For this purpose the Department has included requests for superintendents' houses at North Reading and Rutland, and physicians' houses at Rutland, North Reading, Lakeville and Westfield Sanatoria, and nursing homes at North Reading, Rutland, Lakeville Sanatoria and Pondville Hospital.

During the past decade the need of central control of Massachusetts tuberculosis institutions has become increasingly evident. With the current personnel shortages the difficulties of operating many small institutions have been exaggerated and operation costs have been un-

necessarily increased. Also the division of authority has increased the difficulty of maintaining adequate standards of medical care. For all of these reasons it is urgent that the Recess Commission's recommendations for centralization of tuberculosis institutions in the Department of Public Health be carefully studied and that the consolidation of all tuberculosis hospitals in a state division of tuberculosis, similar to the administration of all mental disease hospitals under the Department of Mental Health, be seriously considered. (Appendix 3.)

MEDICAL TREATMENT.

Streptomycin had been of great value in extrapulmonary cases, where it has been very effective in the closure of sinuses and the relief of patients with renal tuberculosis. The resultant shortening of treatment has more than offset the cost of the drug. In pulmonary tuberculosis it has been effective in certain cases with early exudative lesions, and especially valuable in tuberculosis of the larynx, trachea and bronchi. At present the Department is collaborating with the Children's Hospital and the Massachusetts General Hospital in the treatment of acute forms of tuberculosis in children hospitalized at the North Reading State Sanatorium. Streptomycin, promipole and P. A. S. under a research grant from the United States Public Health Service are being employed.

IMMUNIZATION.

After some twenty-five years of development and trial in various parts of the world B. C. G. vaccine (Bacillus Calmette Guerin) is coming to be accepted as an effective agent in the prevention of tuberculosis. Its use is limited to individuals not already infected, as indicated by the tuberculin test. Experience with student nurses indicates that the vaccine confers an immunity of 75 to 80 per cent. The duration of protection is not definitely known, but seems to be over five years. The safety of B. C. G. vaccine has been amply confirmed by its use on more than a

million people in Europe, and, moreover, no systemic reaction accompanies vaccination, and local reactions to inoculation by the multiple pressure method are negligible. The intracutaneous method produces a small ulcer which heals in four to eight weeks.

With the present low level of tuberculosis in this part of the country general vaccination of the uninfected population is not warranted, even with a reliable vaccine. However, certain groups subject to special risk of infection, as medical students, student nurses and children exposed to tuberculosis in the family, should have the benefit of this type of protection. B. C. G. vaccine is now being made available in the country through the United States Public Health Service, for use in controlled studies in special groups, as outlined above. In Massachusetts it is being given by the Department on a voluntary basis to student nurses in two large Boston hospitals. In the fall it will be offered to nursing students in additional hospitals and to the students in three Massachusetts medical schools.

SOCIAL SERVICE.

During the past decade medical social work has assumed an increasingly important place in the adjustment of social and economic problems of the tuberculosis patient. All state sanatoria and one of the county sanatoria now employ full-time medical social workers who work with the medical and nursing staffs of the sanatoria in the adjustment of the individual patient and the problems of his treatment and recovery. Collaboration with the public health nursing and social agencies in the community is of great value in the readjustment of the patient to home conditions, and employment, on his return from the sanatorium.

REHABILITATION OF TUBERCULOUS PATIENTS.

Re-training and rehabilitation have become important parts of the adjustment and re-employment of the tuberculous patient who because of his disease is obliged to

change his occupation. With the co-operation of the Massachusetts Tuberculosis and Health League and its branches, rehabilitation workers have been furnished to two of the state sanatoria where in collaboration with the members of the medical, nursing, social service and occupational therapy staffs they are developing programs for the education and re-training of patients in need of such guidance. The program includes education of younger patients who had not been able to complete their regular school work, as well as basic training directed toward occupational objectives. Retraining in the sanatoria is supplemented by the work of rehabilitation agents in some fifteen local tuberculosis and health associations of the States, together with nursing and social service personnel in the eight state district health offices. The Department also pays subsidy for a period up to one year for the re-training of suitable convalescent patients at the Rutland Training Center.

THE UNSETTLED AND RECALCITRANT PATIENT.

A major problem during the past few years has been the hospitalization of unstable, unsettled patients, the majority of whom find their way into the Boston City Hospital. In the past such cases had regularly been hospitalized at the State Infirmary at Tewksbury. In 1942, however, the tuberculosis wards at Tewksbury were closed because of a shortage of help: Unsettled cases were hospitalized in the state sanatoria, and in rare instances in county institutions, with the approval of the local boards of health, who could then claim reimbursement from the State Department of Public Welfare. This arrangement has not solved the problem, but rather has created a serious situation in the wards of the Boston City Hospital where suitable accommodations are not available.

Hospitalization of this type of patient is not satisfactorily carried out at a sanatorium for other patients, as many of the patients in question are floaters, some of whom have criminal records and do not as a group co-

operate well in the medical treatment. Since the closure of Tewksbury unsettled women have been accepted in the state sanatoria and have not constituted any serious problem. A large part of unsettled male patients, however, have been unco-operative and unwilling to accept medical treatment, and should be handled in a separate public institution. Since they are suffering from a disease dangerous to the public health, the ultimate responsibility for their care rests with the Department of Public Health, and until such time as a separate institution or separate unit in an approved sanatorium can be provided, hospitalization of such male patients should be furnished by reopening one or more of the closed wards at the Westfield State Sanatorium. The closed wards of the Westfield State Sanatorium, while available for temporary use, were built thirty-seven years ago and are not suitable for permanent occupancy.

COMPULSORY HOSPITALIZATION.

The difficulties in securing hospitalization of the small group of recalcitrant patients has in the past five years led to rather drastic legislation in certain States, especially in the western part of the country. There is no question that unco-operative tuberculosis patients who will not accept hospitalization or observe precautions in their homes constitute a serious public health menace. Isolation and quarantine methods are not applicable to the situation because of the long duration of the disease, and hospitalization is the logical solution to the problem. Theoretically a law authorizing compulsory hospitalization of such patients on suspended sentence is the logical solution of the problem. Practically we are presented with serious complications when such an act is put into practice. Courts have been reluctant to commit tuberculous individuals to sanatoria for indefinite periods, and local boards of health have hesitated to resort to such a measure. Unless the law authorizes detention under suspended sentence a large proportion of patients committed will leave the sanatorium shortly after admission.

The greatest danger in the employment of compulsory hospitalization is the fear that it inspires in the public at large. Experience has shown that where it has been generally employed large numbers of people who believe they have tuberculosis are kept from clinics and from physicians' offices, and there is increased reluctance on the part of patients to accept sanatorium care when needed. A serious problem is created where recalcitrant patients who are forced into tuberculosis sanatoria have a pernicious effect upon other sanatorium patients. Individuals admitted under compulsion rarely co-operate in medical treatment and create a disturbing influence in the sanatorium, and make it extremely difficult to maintain a hospital atmosphere conducive to treatment.

In our opinion a statute which authorizes the courts to commit recalcitrant tuberculosis patients on suspended sentence is desirable if used with great care and discretion by public health officials. Such legislation should, however, be conditional upon the establishment of a separate institution for such patients in which they can be restrained and treated separately until there is evidence that they are willing to accept treatment voluntarily, and co-operate with health officers in the protection of the community.

FINANCIAL ASSISTANCE TO FAMILIES.

One of the greatest obstacles to the general acceptance of sanatorium care is the inadequacy of present relief measures for the family of the patient. Usual welfare allowances cannot be considered adequate for a family in which there is tuberculosis, nor are wage earners generally willing to give up their work except in the presence of disabling illness, if they feel their families are to be placed on public welfare allowances.

In 1943 the Province of British Columbia adopted a social assistance scheme under which the provincial government is authorized to pay not only the cost of hospitalization for an indigent tuberculosis patient, but when the individual is a bread-winner an allowance to his family

for food, fuel, rent and such additional allowances for diet and other necessities as may be indicated after investigation of the individual case. At the completion of sanatorium treatment the above allowance may be continued until the patient is again able to support his family. Eighty per cent of the cost is borne by the province and 20 per cent by the municipality of the patient's residence.

Under the British Disablement Act allowances are paid by public health authorities to tuberculosis patients during their treatment and convalescence. These grants cover reasonable living expenses and extras for the patient's family while he is in the hospital and until he is able to return to work.

Some such form of special allowance or disability insurance is indicated if we are to secure full use of existing sanatorium facilities, and at the same time insure the prompt hospitalization of early tuberculosis, and the completion of treatment in the sanatorium.

SUMMER CAMPS FOR TUBERCULOUS CHILDREN.

On joint recommendation of the Department and the Massachusetts Tuberculosis and Health League all but six health camps for children have been closed or transferred to the management of other agencies. This leaves much more of both the time and resources of voluntary associations for education, rehabilitation and other projects which contribute more directly to the prevention and control of tuberculosis. It has been found that summer camps are not measures effective in the prevention of tuberculosis.

VOLUNTARY AGENCIES.

The work of voluntary health agencies has been materially extended and strengthened in the past ten years. Educational methods have been improved and more widely applied. In industrial and community surveys the associations have taken much of the responsibility for the development and organization of the program. In their respective industries and communities they have

organized and carried on the essential educational campaign, have obtained consents for examinations, and have mailed reports to negative cases. In the community there are greater opportunities than ever before for the voluntary associations to collaborate with the official health agencies in the improvement of health education and the extension of rehabilitation of tuberculosis patients. These agencies could do much in the future not only to further the tuberculosis program, but also to promote better appreciation of the value of public health and the need of active community support for the maintenance of essential health services.

Since 1930 the following specific accomplishments in tuberculosis control can be reported:

1. Chapter 500 of the Acts of 1943 established uniform rates for county sanatoria at \$10.50 per week.
2. Adequate facilities for pneumothorax refills have been provided through the outpatient departments of all state, county and municipal sanatoria, together with special refill clinics in the Boston health centers.
3. In accordance with previous recommendations tuberculosis wards for children have been discontinued at all county and municipal sanatoria and the children needing treatment transferred to North Reading State Sanatorium.
4. Continuation of the policy of substitution of consultation clinics staffed by state and county sanatoria for the municipal tuberculosis dispensaries. Some 32 consultation clinics are now being operated, and all but 19 of the local tuberculosis clinics in cities under 100,000 have been discontinued.
5. Examinations to determine the existence of tuberculosis in the families of tuberculous patients are now being made by the great majority of local boards of health. Facilities are conveniently available to practically all cities and towns in the Commonwealth, and the percentage of contacts examined has been greatly increased.
6. Full-time medical social workers have been pro-

vided at all the state sanatoria and at one county institution. Social service should be provided as promptly as possible in the other county and municipal sanatoria.

7. Mass X-ray examination of industrial workers by the mobile units of the Department of Public Health has covered a majority of the workers in the large industries of the State.

8. During the past three years federal grants-in-aid from the United States Public Health Service have made it possible for the Department to put on two additional mobile photoroentgen units and to begin the mass examination of adult populations in communities. During the fiscal year 1947, 148,000 examinations were made by these units.

9. Federal grants-in-aid for tuberculosis control totaled \$249,000 for the fiscal year 1947. These funds were granted specifically for extension and improvement of tuberculosis case-finding at the state and community level. In addition to the expansion of its own case-finding program the Department has made sub-grants to 5 municipal health departments, to 3 county sanatoria and 11 large general hospitals. These funds are used for the purchase of equipment, employment of personnel and other incidental expenses for the expansion of case-finding.

10. On recommendation of the Department and the Massachusetts Tuberculosis and Health League all but six health camps for children have been closed or transferred to the management of other agencies.

RECOMMENDATIONS.

1. Sufficient increase in nurses' salaries should at once be provided to make it possible to utilize all available tuberculosis beds; at the present time about one third of all sanatorium beds in the State are vacant for lack of sufficient nursing as well as other types of necessary personnel.

2. An adequate system of social and financial assistance to the families of tuberculosis patients should be pro-

vided to insure completion of treatment by these patients, and the maintenance of their families on a scale consistent with modern health standards.

3. As soon as possible, a separate unit should be provided at one of the state sanatoria for the treatment of unsettled male patients needing custodial care.

4. As soon as a small detention unit can be provided for recalcitrant male tuberculosis patients, existing statutes should be amended to permit the compulsory hospitalization of these custodial patients who, by their refusal of treatment and public health precautions, constitute a menace to the general public health. Hospitalization should be on a probation basis.

5. As a safeguard to nurses and internes, B. C. G. vaccine should be made available on request to general hospitals.

6. Support of the proposed legislation (Appendix 19) requiring the pre-employment X-ray examination of teachers and other school employees, and periodic re-examination of such employees.

7. Support of appended legislation (Appendix 3) relative to the centralization and consolidation of tuberculosis institutions throughout the State, within the Department of Public Health.

Hospital Facilities.

EXISTING HOSPITAL FACILITIES.

During the past decade the problem of providing adequate hospital facilities for the entire population has received an increasing amount of attention. Our philosophy of the rôle of the hospital in community health programs is changing. Formerly hospitals were places where people went to die. During the present era they function not only as a place for the carrying out of medical-care programs, but also for the practice of preventive medicine. The artificial separation of medical care and public health is no longer acceptable, and in hospitals these are becoming unified in services rendered to the individual patient.

Since the passage of the Hill-Burton Bill, which has now become Public Law 725 (Hospital Survey and Construction Act), even more attention is being centered on hospitals, not only from the point of view of adding additional medical facilities to a particular community, but also that of integrating the entire hospital system in a given area or State. In connection with this recent interest, the Commission on Hospital Care was set up by the American Hospital Association to survey existing hospital and health center facilities on a nation-wide basis. Simultaneously with the study initiated throughout the country, a survey was started by the Department in Massachusetts late in 1945, which included not only existing hospitals but public health facilities.

Tabulations resulting from this survey have been prepared. Table 10 is a summary of existing hospital facilities in Massachusetts, indicating the distribution of these institutions according to type and ownership. The figures in Tables 10 and 11 which refer to number of beds, indicate the normal bed capacity, *i.e.*, the number of beds for which a particular hospital was built. In many instances this figure is smaller than the actual number of beds in use for inpatient care (complement) because of the factor of overcrowding. Many hospitals have been forced in the last few years to utilize for inpatient care beds placed in corridors or rooms formerly used for teaching, storage and other purposes. Tables 12 and 13 indicate the bed complement of the hospital, *i.e.*, the actual patient census. It will be noted that there are in the Commonwealth a total of 219 hospitals with a normal bed capacity of 44,044 beds. Of these institutions, 147 are general hospitals.

A. *General Hospitals.*

The distribution of the 147 general hospitals in Massachusetts, according to size and ownership, is shown in Table 11. Of the total number of general hospitals, 92 have 100 beds or less, 45 have 100 to 249 beds, and but 10 have 250 beds or more. The distribution of beds

according to services in hospitals of 25 beds and over is shown in Table 12. In these institutions a fair proportion of beds have been allotted to the various medical specialties. It is interesting, however, that only 17 beds have been allocated specifically for venereal disease. Table 13 demonstrates the bed allotment according to specific services in general hospitals of varying size. With respect to infectious disease, one may conclude that, in general, the larger the hospital the greater the tendency to allocate beds for contagion. Yet of a total of roughly 17,000 general hospital beds, only 111 are allocated for chronic diseases. As would be expected, the distribution of medical, surgical, obstetrical and pediatric beds is more even throughout all the hospitals.

B. *Acute Communicable Disease.*

The marked decrease in the general incidence of communicable diseases has resulted in a decreased demand for communicable disease hospitalization. The total number of communicable disease beds available in the Commonwealth is just over 0.2 bed per thousand population, which is approximately double the number recommended by the Hospital Council of Greater New York. There is some irregularity in distribution of beds throughout the State, but this is due to the fact that beds tend to be concentrated in larger centers, and that many patients are transported to these centers. Most patients in District II are hospitalized at the Haynes Memorial Hospital in Boston, and many in District VI are sent to the Belmont Hospital in Worcester.

In Table 7 are given the names of the communicable disease hospitals, locations, and the number of beds. The facilities of some of these hospitals are not used continuously. The New Bedford Isolation Hospital is rarely in operation. The Newton-Wellesley Hospital communicable disease section is closed at times, and the communicable disease beds of the Jordan Hospital have not been used for several years. During the past ten years several small communicable disease hospitals have been

permitted to cease operating because it was felt that the community had made satisfactory arrangements for the care of patients elsewhere. The hospitals for communicable diseases in Fitchburg, Gardner and Malden have been closed, and the communicable disease beds of the Sturdy Memorial Hospital, Attleboro, Lawrence General Hospital, Lawrence, and the Cooley-Dickinson Hospital, Northampton, have been discontinued. The Board of Health Hospital, Brookline, ceased taking acute communicable disease cases several years ago.

Because of the high cost of care in communicable disease hospitals, it can be understood that there should be constant pressure to close such units. For instance, in 1941 the New Bedford Isolation Hospital was open for several weeks at a cost of \$6,000. Total patient days was 22, giving a daily per capita cost of \$273 and a weekly per capita cost of \$1,910.

There are at the present sufficient beds for the hospitalization of communicable disease in the State, but there is a marked tendency towards reducing the total number. The reduction for the most part is occurring among the smaller contagious disease hospitals. To compensate for this loss, it would appear that additions to larger units in Boston, Worcester and Springfield would be justifiable. Upon a state-wide basis, an increase in beds in these areas will have to be considered.

C. *Tuberculosis Hospitals.*

This subject of tuberculosis hospitals is omitted here as it has been previously considered under "Tuberculosis Facts and Figures" (page 28), and again in the section entitled "Tuberculosis Control" (page 120).

D. *Mental Hospitals.*

In Massachusetts at the present time there exists a total of 24 mental hospitals with a normal bed capacity of 21,050. Of these, 12 are non-governmental institutions and the remaining 12 are state owned. These statistics are included in Table I.

Under Public Law 725, a maximum of 5 beds per 1,000 population is provided for the care of mental patients. By this formula, Massachusetts needs 22,840 beds, which indicates a need for about 1,800 additional beds. Another factor deserving consideration in the determination of need is that of overcrowding, which becomes apparent when the normal bed capacity of 21,050 is compared to the actual complement of 23,066. Mental institutions have been forced in recent years to increase bed capacities 10 per cent to provide adequate care for mental patients. The Department of Mental Health is, therefore, planning a five-year construction program, during the first year of which there is proposed an addition of approximately 1,800 beds.

E. *Chronic Disease Hospitals.*

At present, the provision of facilities for the care of patients with long-term illness is a serious problem in the Commonwealth as it is everywhere else in the country. Just how this is to be solved is a matter of debate. In Springfield, one hospital has set aside a complete ward for chronic disease patients. However, although this ward was set up more than ten years ago, some patients admitted at the time of its inception are still occupying beds in this hospital. The problem is even more acute with respect to certain categories of patients, such as those ill with terminal cancer. Usually the hospital is unwilling to have such patients occupy hospital beds for any considerable length of time. Nursing homes and convalescent homes are often inadequately staffed to care for them. In other words, there are no adequate facilities to care for the patient ill with terminal cancer.

The State Department of Public Health is planning the construction of a large chronic disease hospital to be erected somewhere in Metropolitan Boston. Such an institution will furnish facilities for patients who are at the present time not provided for anywhere else in the Commonwealth. This type of institution will offer an excellent opportunity for study and research in the field of geriatrics,

and will indicate the feasibility of other such units. The ordinary general hospital for acute disease is not able to devote a great deal of study to chronic disease primarily because of the expense involved.

Throughout the country considerable thought is being devoted to the possibility of combining facilities for the care of both short-term and long-term illnesses. By such a combination, the staff and facilities available for the care of patients with acute illness could be used as needed for patients with chronic disease. Whether such care should be provided on wards housing acute and chronic patients, or whether separate units should be erected on the hospital grounds for the long-term patient, has not yet been decided upon definitely. It is obvious that both plans have certain advantages.

According to Public Law 725, a ratio of 2 beds per 1,000 population is required to care for chronic disease on a state-wide basis. Figures recently submitted in connection with the Hospital Survey and Construction Program indicate that there are approximately 1,000 beds for chronic disease in Massachusetts, and therefore an unmet need of 8,000 beds. It is apparent that projects for the construction of institutions for the care of patients with chronic disease should have fairly high priority in any balanced construction program. It must be noted at this time that institutions providing custodial care, such as city or town infirmaries, are not classed as chronic disease hospitals.

F. *Nursing Homes.*

Before the passage of chapter 618 of the Acts of 1948 there was no legislation relative to the licensing of nursing homes by any governmental agency in Massachusetts. The General Laws provided for the licensing of homes for the aged by the State Department of Public Welfare. Chapter 618 of the Acts of 1948, which was passed June 10, 1948, signed by Governor Bradford on June 15, 1948, and became effective September 13, 1948, provides for the transfer of the licensing of homes for the aged

from the Department of Public Welfare to the Department of Public Health, and in addition gives the latter the power to license nursing and convalescent homes in the Commonwealth.

ACCOMPLISHMENTS.

1. In 1936 it was recommended that all hospitals, except those caring for mental patients, be subject to license by the Department of Public Health. The passage of the Hospital Licensing Law in 1941 created within the Department facilities to license all medical institutions in the Commonwealth, including general, chronic disease and tuberculosis (except state and county owned) hospitals. Federal hospitals are not licensed by the Department.

2. Nursing and convalescent homes and homes for the aged are now licensed by the Department of Public Health through the passage of chapter 618 of the Acts of 1948.

3. In accordance with Public Law 725, a survey of all existing hospitals and health center facilities was conducted in Massachusetts by the Department of Public Health. From the information derived from this survey, a state plan is now being prepared. In this plan, existing and proposed hospital facilities, including general, mental, tuberculosis and chronic disease hospitals, will be defined. Those areas in which the greatest need for hospital beds exists will be given a high priority rating according to the requirements of the act, and accordingly federal funds for construction will be made available to these areas early in the program. Federal funds are to be matched by local contributions in the ratio of one part federal to two parts local. Details are contained in the pamphlet entitled "Public Law 725 — Hospital Survey and Construction Act (79th Congress) — Massachusetts State Plan."

RECOMMENDATIONS.

1. That consideration be given to the establishment of additional facilities for the care of patients with

chronic illness. Such facilities may be provided for on a state-wide basis or as separate units in conjunction with general hospitals.

2. That, as the total number of beds in the smaller isolation hospitals are discontinued, consideration be given for the addition of beds to the larger contagious disease hospitals in given areas.

3. Enabling legislation for the Division of Hospital Survey and Construction.

TABLE 10. MASSACHUSETTS HOSPITALS.

Distribution According to Type and Ownership.

Data furnished by American Hospital Association, 1946. Each hospital is listed only once in accordance with its principal use.

For more recent tabulation of available beds for tuberculosis and communicable diseases, see the special sections on these subjects.

TABLE 11. GENERAL HOSPITALS IN MASSACHUSETTS.

Distribution According to Size and Ownership.

[Data furnished by American Hospital Association, 1946. Each hospital is listed only once in accordance with its principal use.]

SIZE.	Total Number of Hospitals.	Total Number of Beds.	NUMBER OF HOSPITALS.						NUMBER OF BEDS.					
			NON-GOVERNMENTAL.			GOVERNMENTAL.			NON-GOVERNMENTAL.			GOVERNMENTAL.		
			Non-Profit.	Proprietary.	Independent.	Corporation.	Participating.	State.	Associations.	Church.	City.	County.	City.	County.
Less than 25 beds .	23	436	-	5	8	7	3	-	-	-	98	140	128	61
25-49 beds .	32	1,113	-	18	3	10	1	-	-	-	654	94	330	35
50-99 beds .	37	2,460	1	28	1	6	1	-	-	97	1,866	67	365	65
100-249 beds .	44	7,178	9	33	-	-	2	-	-	1,515	5,377	-	-	-
250-499 beds .	8	2,597	2	2	-	-	4	-	-	623	664	-	-	-
Over 500 beds .	3	3,181	-	1	-	-	2	-	-	-	904	-	-	-
Totals .	147	16,968	12	87	12	23	13	-	-	2,235	9,563	310	823	4,037

For more recent tabulation of available beds for tuberculosis and communicable diseases, see the special sections on these subjects.

TABLE 12. HOSPITALS (25 BEDS AND OVER).

Distribution of Beds According to Services.

[Data furnished by American Hospital Association, 1946. Each hospital is listed only once in accordance with its principal use.]

MEDICAL TYPE.	Total Number of Hospitals	Total Number of Beds.	General Medi-	General Medi-	Obstetric.	Pediatric.	Contagious.	Tuberculosis.	Convalescent Hos-	Chronic.	Orthopedic.	Eye, Ear, Nose	Skin and Cancer.	Urgingaged.	
			genl.	Surge-	genl.	surge-	genl.	mental.	and Rest.	ees.	Dis-	and Throat.	Eye, Ear, Nose	Cancer.	
General	118	16,381	1,813	2,775	2,638	1,554	524	61	70	444	99	11	221	103	68
Maternity	4	385	—	3	376	—	—	—	—	—	6	—	—	—	—
Contagious	5	544	—	—	—	—	344	200	—	—	—	—	—	—	—
Nervous and mental	21	20,978	—	—	—	—	—	—	20,978	—	—	—	—	—	—
Tuberculosis	19	3,337	—	—	—	—	—	—	3,287	—	50	—	—	—	—
Chronic and convalescent	4	517	—	—	—	—	—	—	—	517	—	—	—	—	—
Other special	11	1,262	—	—	—	705	—	—	—	—	—	—	200	223	134
Totals	182	43,404	1,813	2,778	3,014	2,259	868	3,548	21,048	1,011	99	17	421	326	68
															6,134

For more recent tabulation of available beds for tuberculosis and communicable diseases, see the special sections on these subjects.

TABLE 13. GENERAL HOSPITALS (25 BEDS AND OVER).

Distribution of Beds According to Services.

(Data furnished by American Hospital Association, 1946. Each hospital is listed only once in accordance with its principal use.)

Size.	Total Number of Hospitals.	Total Number of Beds.	General Medi-	General Surgi-	Pediatric.	Obstetric.	Tuberculosis.	Convalescent and Rest.	Venerel Disease.	Orthopedic.	Eye, Ear, Nose and Throat.	Skin and Cancer.	Unassigned.
25-49 beds	31	1,053	4	168	264	28	4	3	-	2	-	-	525
50-99 beds	33	2,176	167	218	560	162	-	-	38	-	12	-	1,019
100-249 beds	39	6,549	422	785	1,200	740	66	37	-	48	-	5	2,020
250-499 beds	12	3,712	608	822	464	374	150	8	-	71	-	80	15
500 beds and over	3	3,091	568	782	150	250	304	18	70	353	47	11	30
Totals	118	16,381	1,813	2,775	2,638	1,554	524	61	70	444	99	11	38
											221	103	88
													6,000

For more recent tabulation of available beds for tuberculosis and communicable diseases, see the special sections on these subjects.

Venereal Diseases.

Five venereal diseases — syphilis, gonorrhea, chancre, lymphogranuloma venereum and granuloma inguinale — are reportable by physicians in Massachusetts. Syphilis and gonorrhea constitute the major problems, the other venereal diseases being uncommon in the State.

Syphilis and Gonorrhea as Preventable Diseases. — Syphilis and gonorrhea are preventable diseases in that the method of spread of these diseases is known (sexual intercourse), and in that we have treatment methods not only effective in controlling morbidity, but also effective in controlling infectiousness. Lack of greater success in the past in preventing these diseases has resulted from the fact that the mode of spread involves the difficult problem in human behavior of sexual promiscuity and in difficulties in carrying out or inadequacies of treatment methods. Effective antisiphilitic treatment has been available for years, but since a year and a half of weekly injections were required for ideal treatment, and since only 20 to 25 per cent of patients the country over received minimally adequate treatment (40 weekly injections), the situation was not satisfactory. At present effective penicillin schedules are available for antisiphilitic treatment which require only approximately a week for completion. Effective chemotherapy for gonorrhea dates back only a little more than ten years to the advent of the sulfonamides. The sulfonamide drugs became less efficacious with the development of an increasing percentage of sulfonamide-resistant strains, but fortunately penicillin proved to be even more effective and penicillin-resistant gonorrhea has not yet appeared. At present a single injection of one of the slowly absorbed types of penicillin is highly effective in uncomplicated gonorrhea.

Present Facilities for Treatment of Venereal Diseases in Massachusetts. — The bulk of public treatment facilities is provided by the twenty-five state co-operating clinics which are subsidized by the Division of Venereal Diseases of the State Department of Public Health. Twenty-one of these clinics are located in the out-patient depart-

ments of general hospitals, while four are situated in local boards of health. Arsenical, bismuth and sulfonamide drugs are distributed without charge by the State Department for the treatment of venereal diseases to private physicians and clinics, while pencillin for the treatment of syphilis and gonorrhea is distributed only to the state co-operating clinics. The State Department also reimburses hospitals connected with the state co-operating clinics for hospitalization of syphilitic patients for penicillin treatment.

National Trends in Syphilis and Gonorrhea. — Some of the changes in the national picture between 1941 and 1947 are shown for syphilis in Table 14 and for gonorrhea in Table 15.

TABLE 14.—*Reported Cases of Syphilis in United States Civilians and in Armed Forces, 1941–1947.*

YEAR.	Total, All Stages. and Stage Unspecified.	Primary and Secondary.	All Early Syphilis. ¹	Late and Late Latent.	Congenital.
1941 . . .	484,647	74,764	183,422	201,190	17,592
1942 . . .	486,386	89,845	206,278	202,216	16,924
1943 . . .	594,021	111,333	260,242	252,995	16,173
1944 . . .	501,947	122,166	244,556	203,396	13,576
1945 . . .	411,840	132,532	233,867	142,731	12,339
1946 . . .	409,531	143,570	250,906	125,836	12,106
1947 . . .	399,067	132,365	240,120	122,257	12,284

¹ Primary, secondary and early latent syphilis.

TABLE 15.—*Reported Cases of Gonorrhea in United States and Territories.*

1941	193,032
1942	218,554
1943	280,923
1944	307,504
1945	293,694
1946	372,594
1947	409,793

The data in Table 14 shows a gradual doubling of the number of primary and secondary cases of syphilis re-

ported, a substantial reduction in the number of cases of late syphilis reported for the first time, and a substantial reduction in the number of cases of congenital syphilis. Other data show a steady reduction in the general mortality and a marked reduction in the infant mortality rate due to syphilis, and a reduction in the psychoses due to syphilis. Table 15 shows the gradual increase in reported cases of gonorrhea.

The increase in number of reported cases of primary and secondary syphilis is due in part to better case-finding methods and more accurate reporting, although some increase in the syphilis attack rate during the war cannot be denied.

Trend of Syphilis and Gonorrhea in Massachusetts. — The number of cases of syphilis and gonorrhea reported annually since 1937 is shown in Table 16.

TABLE 16. — *Reported Cases of Syphilis and Gonorrhea in Massachusetts.*

YEAR.	Stages I and II.	SYPHILIS.			Gonorrhea.
		Congenital.	All Other Syphilis.	Total.	
1937 . . .	1,199	358	4,650	6,207	5,856
1938 . . .	944	389	4,341	5,674	4,938
1939 . . .	618	316	3,954	4,888	4,652
1940 . . .	649	312	4,063	5,024	4,014
1941 . . .	628	285	3,700	4,613	3,791
1942 . . .	953	312	4,432	5,697	4,454
1943 . . .	1,132	398	3,990	5,520	4,701
1944 . . .	1,149	299	3,620	5,069	4,935
1945 . . .	1,281	217	2,880	4,378	5,487
1946 . . .	1,918	206	2,844	4,970	5,062
1947 . . .	961	204	2,046	3,211	3,805

The data in Table 16 on reported cases of gonorrhea show that a slow decline in number was interrupted by the war, but was resumed in 1946 and 1947. Reported cases of primary and secondary syphilis also declined

appreciably before the war, but rose during the war until the 1937 level was reached in 1943-1945. In 1946 the number of primary and secondary syphilis cases reported increased considerably and reached a level substantially higher than in 1937. However, the number of such cases reported in 1947 has again declined considerably. It is reasonably clear that this substantial increase in 1946 was due in a large part to the return of men from the armed forces in the incubation period of, or with early, syphilis, and to the high rates in returning civilian migratory war workers.

Reported cases of congenital syphilis in the decade covered by Table 16 show a steady decline. The category "All Other Syphilis" in the table is comprised mainly of cases of late syphilis (early latent syphilis is also included). It is gratifying to see the steady decline in this category interrupted only temporarily during the war.

It is still well to keep in mind that in cases reported in 1946 in Massachusetts the combined total of syphilis and gonorrhea was twice that of German measles, three times that of tuberculosis, seven times that of lobar pneumonia, twenty-five times that of diphtheria, twenty-six times that of poliomyelitis, one hundred and fifty times that of bacillary dysentery, etc. Relaxation of efforts can lead to reversal of the favorable trend.

Status of Venereal Disease Reporting in Massachusetts. — For many years it has been well known that reporting of venereal disease by private physicians in Massachusetts has been much better than in other States, although admittedly less complete than with other communicable diseases. It is not at all clear that reporting by private physicians is necessarily as good now as it was formerly. The State Department of Public Health has not been as active in encouraging and educating private physicians to such reporting as it formerly was. Numerous younger physicians have gone into practice in the State since the war who have not had the advantage of much education in this regard by the State

Department. Since the advent of effective, short penicillin schedules for gonorrhea and syphilis adapted to office practice, many private physicians are treating these diseases who did not treat them before the war, and consequently are not in the habit of reporting them.

Cases of venereal disease at the present time are reported directly to the State Department of Public Health rather than to local boards of health, which has been found by previous experience in this State to result in better reporting. Such cases are not reported by name (except for delinquent and unco-operative patients), and the only identifying data on the reports are the patient's age and town of residence. Consequently, it is virtually impossible to eliminate duplicates or to determine if a certain case has been reported.

It is felt that many physicians might object to reporting private patients with venereal diseases by name, particularly since they have been educated to another system. On the other hand, public clinics would largely have no such compunction. It is recommended that help in eliminating duplicates without hindering reporting would be achieved by requesting that patients with venereal disease be reported by name or initials, age and town of residence.

RECOMMENDATIONS.

1. That the State Department of Public Health be urged to stimulate reporting of venereal diseases by private physicians by direct appeal and all other available methods.
2. That the Department of Public Health's regulations be changed so that venereal disease cases would be reported by type of disease and its form or stage, together with such identifying data as name or initials, age, sex, race, marital status, and address (town and, optionally, street address). That the Department be urged to take all due precautions in preserving the confidential nature of these reports.

3. That all laboratories be required to report to the State Department of Public Health the name and address of all persons with positive serologic tests for syphilis, together with the name and address of the physician who sent in the specimen for testing. That, again, the State Department be urged to employ due discretion in the use of this information, keeping in mind its confidential nature and the possibility of false positive tests.

4. That Department regulations be changed so as to provide for the immediate reporting without exception of the names and identifying data of all persons (sex contacts) from whom an individual with a venereal disease in an infectious stage may have contracted his disease or to whom he may have transmitted his disease.

Cancer.

PREAMBLE

In House Bill, No. 1200 submitted December 2, 1936, the activities of the Department of Public Health relative to cancer were reviewed and the following recommendations were made:

1. That the cancer program of the Department of Public Health be continued, and supported by adequate appropriations to permit the development of additional diagnostic clinics, in localities where competent personnel is available and there is need for such clinics, and to increase the value of the tumor diagnostic services.

2. That hospitals be encouraged to establish independent treatment clinics wherever equipment and personnel can be made available. The purchase of radiation equipment (radium and X-ray apparatus) for general hospitals should depend upon private initiative and resources.

3. That the Department's program of lay education in regard to cancer be further developed.

4. That the necessary education of the medical pro-

fession in regard to the early recognition of cancer be continued by the state, county and local medical societies, with the aid of the Department of Public Health. In this connection an additional appropriation to the Department is recommended to permit defraying the expense of consultation service in the state diagnostic clinics.

5. That endowment of fellowships for postgraduate training of qualified surgeons and physicians in the diagnosis and treatment of cancer be solicited from private sources.

REVIEW OF CANCER CONTROL ACTIVITIES.

In reviewing the work of the Division, we find the majority of the recommendations made in the 1936 Report have been carried out. Let us examine them in detail.

The name of this Division was changed from Adult Hygiene to Cancer and Other Chronic Diseases, but its general activities have continued. Education and statistical research have been conducted on an even greater scale. Services, in the form of cancer clinics and pathological service to physicians, has continued.

In 1936 the personnel of the Division numbered 26. The budget was \$104,500, 93 per cent of which came from state funds. At the present time the personnel numbers 35 and the budget is \$176,699.50, 55 per cent coming from state funds. The actual amount of state funds in 1948 was \$160 less than in 1936.

Statistics and biometrics comprise an integral part of the activities of the Division of Cancer and Other Chronic Diseases. The data for studies are obtained from the death records, hospital records, clinic records, questionnaires to physicians, follow-up of cancer patients, and personal interviews in house-to-house surveys. This material is transferred to punch cards, tabulated and later subjected to critical analysis.

The results of many of these studies have been pub-

lished in various scientific journals. These papers cover methodology, research into causation of cancer, clinical research and evaluation, as well as papers on the program itself.

CANCER CLINICS.

The state-aided cancer clinics have continued to function, and we believe their present organization and services show an improvement over the 1936 standards. The data obtained from the study of patients examined at these clinics have been utilized in statistical and other studies carried on by the Division.

Since the 1936 Report, the cancer wing at the Westfield Hospital was opened and four new cancer clinics were established. As an additional improvement three of the weaker clinics were closed and the amalgamation was accomplished following a survey of the clinics by the Massachusetts Medical Society in 1942. There are now sixteen state-aided cancer clinics and two state clinics, located at the Pondville and Westfield Hospitals, respectively. The attendance of new patients at the clinics is indicative of the trend in demand for services:

	New Patients.
In 1937	4,284
In 1942	4,340
In 1947	4,516

Approximately one third of the new patients examined show malignant disease in some form. In the interim, the method of financing clinics has been changed to conform to the State Constitution — the Department now buys services to patients from the clinics; the latter, while independent, conform to set standards.

OTHER APPROVED CANCER CLINICS (NOT STATE-AIDED).

The following hospitals maintain cancer clinics approved by the American College of Surgeons. These clinics vary in their efficiency and have existed as independent units

for a number of years. One of these is now seeking admission to the list of state-aided clinics.

Boston:

- Boston City Hospital.
- Lahey Clinic.
- Massachusetts General Hospital.
- Massachusetts Memorial Hospital.
- Palmer Memorial Hospital.
- Peter Bent Brigham Hospital.

Brookline:

- Free Hospital for Women.

Fall River:

- Truesdale Hospital.

Worcester:

- Worcester City Hospital.

Tumor Diagnostic Services.

Through the continuation of a co-operative arrangement between Harvard University Cancer Commission and the Division of Cancer and Other Chronic Diseases in the State Department of Public Health, an outstanding service is being rendered in the field of tumor diagnosis to the residents of this Commonwealth through registered practicing physicians. The demand for this diagnostic service shows a steady increase, as illustrated by the following figures: —

		<i>Specimens Received and Diagnosed</i>
1937	.	3,106
1942	.	3,322
1947	.	8,474

Cytologic Diagnosis Service.

Through a short-term grant from the Commonwealth fund a co-operative project was made possible, utilizing the good offices of the Division of Cancer and Other Chronic Diseases in conducting a special study to determine the value in the detection of early cancer through

microscopic examination of prepared vaginal smears, — a technique developed by Dr. George N. Papanicolaou. During the last two and one half years some 3,500 diagnoses were rendered on the examined smears in response to requests from examining physicians working in the state and state-aided cancer clinics. It should be pointed out that the present studies are supported by a temporary grant and will be discontinued upon expiration of the grant.

EDUCATION.

Professional.

In 1941 the Department of Public Health purchased a book entitled "Cancer — a Manual for Practitioners", consisting of some 300 pages of published text prepared by the publication committee of the American Cancer Society; this was distributed free to all registered physicians in this State. This manual proved to be so popular that many copies were sold to departments of public health in other States — the total edition numbered 14,000 copies. In the interests of advancing professional education, this text should be brought up to date, and it is expected that the Massachusetts Division of the American Cancer Society will subsidize the revision of the text. The cost of publication could be defrayed by permitting the Division of Cancer and Other Chronic Diseases to purchase at cost and far below the selling price the necessary number of copies for distribution to all registered physicians throughout the Commonwealth.

Teaching Clinics.

These are held at least once a year as far as possible in each of the state-aided cancer clinics; during the war, due to dislocation of medical personnel necessitated by exigencies of military service, these clinics were held less frequently.

YEAR.	Clinics Held.	Attendance of Physicians.
1936	42	843
1937	69	1,384
1938	74	1,796
1939	63	1,364
1940	60	1,328
1941	39	898
1942	22	518
1943	6	137
1944	15	316
1945	18	655
1946	14	524
1947	13	537

It is customary at the annual meeting of heads of cancer clinics to invite the entire staff of clinics to participate in the scientific discussions.

LAY EDUCATION.

For the most part the educational activities have consisted of the dissemination of cancer information through local co-operative cancer control committees. The organization and supervision has required a great deal of effort during the twelve-year period since the former report.

General symposia have been held in many centers and are well attended.

Seminars for the heads of local lay cancer committees have also been held.

Instruction in cancer has been introduced in several high schools, either as a part of the course in biology or hygiene, or in general meetings.

Essay and poster contests with prizes have also been held in certain schools.

A book for the laity on cancer control, of 114 pages, was published by the publication committee of the American Cancer Society and purchased by the Depart-

ment for free distribution to the heads of the local cancer committees and certain other interested persons.

FELLOWSHIPS AND POSTGRADUATE TRAINING.

In addition to teaching clinics, sponsored by the Department of Public Health, postgraduate and research fellowships in cancer are now made available through national offices of the American Cancer Society and the National Cancer Institute, United States Public Health Service.

ADDITIONAL PROGRESS, OVER AND ABOVE 1936

RECOMMENDATIONS.

The Massachusetts Division of the American Cancer Society has made many grants to individuals and laboratories to enable them to carry on research, and much more is being quantitatively done along these lines than was the case in 1937.

The Commonwealth fund, in 1945, made a grant to help finance a study to be made of the value of the Papanicolaou technique of examining vaginal smears for the detection of early cancer. The results of this study are now being investigated.

A cancer detection center demonstration at the Palmer Memorial Hospital has been opened under a federal grant. This center, in contrast to those which emphasize service to the patient, is an attempt to define the place of a detection center in a cancer control program, and to determine the diagnostic procedures that may be performed in the doctor's office and those which must be done in a center, a clinic or a hospital.

RECOMMENDATIONS.

The subcommittee on cancer submits the following recommendations:

1. That the Division of Cancer and other Chronic Disease should continue its present cancer control pro-

gram, perfecting and enlarging it as indicated and funds and personnel permit.

2. That funds should be appropriated and allocated to the Department for the purchase of suitable educational cancer literature for free distribution to all registered physicians in the State and such lay organizations as deemed advisable.

3. That additional funds be allocated to the tumor diagnosis service to allow it to examine and report on vaginal smears to detect early cancer according to the method of Dr. G. N. Papanicolaou, and make such cytological examination of other smears to establish the diagnosis of cancer as may be advisable.

4. That the bills regarding the reporting of patients suffering with cancer be withheld.¹ It believes that the time has not yet arrived to enact either of these bills.

Reporting by Physicians.

This bill was introduced into the Legislature in 1946, and was given leave to withdraw by the legislative committee which considered it. Your Committee feels that the bill would not result in more than from 50 to 70 per cent of the cases being reported. Cancer is not a communicable disease, and medical practitioners in general are not in favor of making it reportable. It entails considerable additional paper work, and they believe incompleteness will defeat the purpose, and that private patients would resent having their names in a public file, no matter how confidential.

Registration by Hospitals.

Your Committee feels that this bill is preferable to the foregoing, for it is impersonal, and hospitals can be dealt with much more satisfactorily than large numbers of individual physicians. (There are approximately 6,000 registered physicians in Massachusetts.) If the bill is

¹ The Technical Committee on Preventable Diseases as a whole does not give support to this recommendation, and advises that no stand be taken on these bills relative to the reporting of cancer.

enacted, considering the financial condition of the average hospital at the present time, funds should be made available to defray the expense of reporting, tabulating and follow-up of the cases. The mere registration of cases is of little value unless the patient is followed, and the results of treatment or course of the disease are known. This remark applies to both bills.

Chronic Diseases.

The conquest of many of the acute communicable diseases is focussing attention on chronic diseases as a major cause of death and disability. There is great need for comprehensive planning to insure that the widespread interest in chronic diseases is developed into sound and effective activity. Such planning requires the mutual co-operation of the agencies and professions most vitally concerned with the problem. Although planning to meet the economic needs of the chronically ill is of vital importance, primary importance is given here to the medical aspects of the problem, including prevention, research, treatment and rehabilitation. Unfortunately, this Commission did not have the facilities to make a thorough study such as the New York State Joint Legislative Committee on the Problems of the Aging had, which has published several reports on this subject, the latest being Legislative Document No. 61, 1948, and the joint recommendations by the American Hospital Association, American Public Welfare Association, American Public Health Association, and the American Medical Association, "Planning for the Chronically Ill." It is sincerely hoped, however, that this statement will be helpful not only to legislators, but will be a useful guide and stimulus to planning for the chronically ill.

Chronic illness affects nearly every family. It is estimated that about 25,000,000 persons, or a sixth of the population of the United States, are affected with a chronic disease. About 7,000,000 of them have partial disability from their illness, and about a million and a half are invalids. The most important of the chronic diseases are

heart disease, arteriosclerosis, high blood pressure, nervous and mental diseases, arthritis, kidney disease, tuberculosis, cancer, diabetes and asthma. Because special provisions have been made for patients with tuberculosis, cancer and mental disease, they are not being included in the scope of this section.

Every year in Massachusetts, chronic diseases cause nearly \$150,000,000 loss of income, due to inability to work, and although the prevalence of chronic diseases increases with age, and the progressive aging of our population is one of the factors responsible for the growing importance of the problem, it must be borne in mind that chronic disease occurs in all ages. More than one half of the chronically ill are below the age of forty-five, and 16 per cent of them are under twenty-five. More than three fourths of all persons are in the productive years from fifteen to sixty-four. Chronic illness in childhood and adolescence is particularly important because it influences the period of growth as well as the entire period of adult life. In children, chronic disease may have serious effects upon the emotional development and social adjustment as well as upon education. For these reasons the special programs for crippled and handicapped children, as the hard of hearing, the rheumatic fever and crippled children's programs of the Department, should be expanded as rapidly as possible so as to take the necessary conservative measures to rehabilitate and prevent development of further crippling.

The basic approach to chronic disease must be prevention. Otherwise the problems created by chronic disease will grow continuously, and no substantial decline in the incidence or severity of chronic disease can be expected. Therefore intensive health department programs, such as the control of chronic communicable diseases (for example, tuberculosis and malaria) have proved to be effective. In a similar way health departments should take a more active role in programs designed for the prevention of accidents leading to disability, particularly in the home, on the farm, at play, and in industry. The promotion of

optimal health throughout life is an important factor in the prevention of chronic disease. Thus, school health programs should be strengthened, and there is need for wide expansion of nutrition, mental health and housing programs, all of which can have important effects in decreasing the incidence of chronic illness.

The periodic medical examination of apparently well persons needs to be explored on a new basis, including selective laboratory and clinic examinations designed for, particularly, age, sex and occupational groups. Thus, a more thorough examination spaced at proper intervals is indicated for school children. For others, particularly those over forty, screening examinations or health maintenance clinics, whereby the patient is checked for all diseases rather than just for tuberculosis or cancer, should be developed as soon as possible. For example, such mass multi-screening examinations should include the taking of a thorough history, physical examination, chest X-ray, urine analysis, vaginal smears in females, electrocardiography, and other screening devices as they are developed. It seems urgent that all measures to prevent disease be undertaken so as to reduce illness and disability to a minimum. Therefore it is recommended that legislation for the establishment of union health departments be passed forthwith, so that the young as well as the old can reap the benefits of such preventive measures as have been discussed in this section.

Further advances in the prevention and treatment of many chronic diseases are dependent upon research. This requires training and support of qualified personnel and facilities. Such research may be carried out in part by the Department and the local health departments, and in part through our medical schools, the school of public health, and hospitals. Such research should include administrative research, including the methods for development of mass multi-screening clinics and the development of other screening techniques.

Unfortunately, in the past, the problem of chronic illness has been primarily concerned with institutional care

for the advanced stages of diseases. Diagnosis and treatment of illness at its conception are essential to the control of chronic disease. Competent medical supervision for early diagnosis and treatment can have an important preventive effect. Barriers to early, competent diagnosis and treatment must be removed. This requires the construction of hospital and laboratory facilities to cover all our communities with co-ordination of facilities to insure the maximum diagnostic and therapeutic effectiveness to the individual patient. It is therefore recommended that all efforts be made to extend and expand the Health Center and Hospital Survey and Construction Program, which the Department administers under grants from the United States Public Health Service. It is further recommended that, as has been the case with cancer, so with diabetes, heart disease and other chronic diseases, the Department, in co-operation with local health departments, the medical profession and hospitals, develop co-operative clinics for the screening of the apparently well population for referral to doctors and hospitals for diagnosis and treatment of persons who may have chronic diseases in the unrecognized stages; and, further, that the Department provide the necessary facilities in co-operation with doctors and with the hospitals for the provision of diagnosis and medical care for those who cannot afford to purchase these services either directly or through pre-payment insurance. It is further recommended that the Department develop follow-up services so that the patient can be observed carefully over a long period of time for signs of reactivation of the disease process. It is further recommended that the chronic disease hospital referred to elsewhere in this report, and which has already been authorized by the Legislature, be built as soon as possible so that it may act as a nucleus for the development of preventive, research, teaching and medical care of these unfortunate persons.

The care of the chronically ill need not necessarily be hospitalization, and it must take into account the needs of hospital beds for the acutely ill. The general hospital, as at present constituted, is unsuited for the care of long-

term patients. It may lack adequate departments for physical therapy, occupational therapy, rehabilitation, as well as recreational facilities and educational facilities for children, and an understanding of the psychological and social needs of the chronically ill. Moreover, the average long-term patient requires less costly care than is usually provided in the acute general hospital. Therefore the construction of hospital facilities in attached wings to general hospitals is recommended. Such a program must be integrated with one designed for the home care of the chronically ill. Since most rural communities and small cities do not have sufficient public health nurses to provide adequate bedside nursing care, this means that community health councils must be organized to plan jointly with the local health department to furnish this service as well as wide use of practical nurses, nurses' aides, house-keeping service, recreational and vocational rehabilitation. Other measures which the community must provide to make possible the home care of the chronically ill are improved housing, properly supervised boarding homes, medical social work, recreational and occupational therapy. The provision of adequate economic means through social security measures, old age assistance, and public assistance are obvious. It is therefore recommended that as soon as adequate local health units are organized throughout Massachusetts a substantial portion of their time be utilized by programs for the care of the chronically ill. It is important to note at this time that there should not be a separate program designed to take care of those chronically ill persons who are indigent. High standards will be maintained effectively if facilities are created to meet the requirements of the entire community.

The community program for the care of the chronically ill requires the availability of proper nursing and convalescent homes for those who require nursing. Fortunately, the Department has been authorized to license these establishments, as well as homes for the aged where aged persons who require custodial care may be cared for. While the Department will have some inspectors for the

supervision of these homes, it is recommended that the Department be permitted through the necessary appropriations, to employ a sufficient number of inspectors to supervise such nursing and convalescent homes and homes for the aged properly to insure that minimum standards are maintained for the benefit of the residents of such homes and for the operators.

Finally, the Commission wishes to call attention to the importance of planned convalescence and rehabilitation of the chronically ill. The chronically ill will have to be made conscious of their limitations early in the course of the disease, and many of them must be retrained for new occupations so that they may stay within the limits of activity prescribed by their illness and yet maintain their economic independence. The ultimate objective of the program for chronic diseases is designed for early case-finding and early treatment, so that these persons can retain their economic independence and usefulness to the community for as long a time as possible. It is therefore recommended that the Department seek the necessary appropriations to implement the recommendations made in this Commission Report for the development of mass multi-screening clinics, for the necessary research through its hospitals and in co-operation with the medical profession and through hospitals for the provision of follow-up services, and for assistance of communities in the development of community chronic disease programs.

RECOMMENDATIONS.

1. Expansion of special programs for crippled and handicapped children.
2. Strengthening of accident prevention.
3. Expansion of school health, nutrition, mental health and housing programs.
4. Legislation for the establishment of union health departments.
5. Expansion of health center and hospital survey and construction program.
6. Development of co-operative mass multi-screening

clinics of apparently well persons with early unrecognized chronic disease.

7. Provision of necessary facilities for those who cannot afford to pay for diagnosis and clinics.
8. Development of follow-up services.
9. Construction of state chronic disease hospital.
10. Construction of hospital facilities for chronic disease patients in attached wings of general hospitals.
11. Development of community programs for chronic disease control through health councils, including expanded public health nursing, housekeeping services, and recreational and vocational rehabilitation, improved housing, medical social work and economic assistance.
12. Employment by the Department of sufficient number of inspectors to ensure adequate standards by supervising nursing and convalescent homes and homes for the aged.
13. Provision of funds for research, especially development of mass multi-screening clinics.

The Prevention of Accidents.

1. Of the ten most common causes of death in Massachusetts for 1946, deaths from accidents ranked fourth, being exceeded by heart disease, cancer and cerebral circulatory disturbances. The communicable diseases accounted for only two items on this list,— pneumonia fifth in order, and tuberculosis in seventh place.

2. When medicine progressed from responsibilities concerned with the care of the sick and injured to a concept of prevention, that interest was largely limited to preventive measures against disease, with injury almost completely neglected.

3. The commonly held opinion that accidents *will* happen and that there is nothing to do about it, has been thoroughly discounted by the accomplishments of industry in limiting deaths and disability from this cause. If the causes of accidents be sought, few unavoidable accidents will be found. There is a usual explanation in carelessness, negligence, mechanical defects or lack of information on the hazard involved. Accidents are preventable

conditions in the same sense as the communicable diseases, cancer, diabetes and many others of the group health problems of man. Health departments of Massachusetts, both state and local, have undertaken few special activities in this field.

4. Accidents are classed for practical purposes into four main groups, — those that occur in industry, motor accidents, public accidents and home accidents. Motor accidents could be just as reasonably included under public accidents, but the separation made is commonly followed because of the size of the problem and the particular conditions that contribute to the frequency of those events.

5. The prevention of accidents is clearly not the single responsibility of health departments, but they do have an obligation which is not usually met. Organized effort is a matter of co-operation with other departments of government; with the Registry of Motor Vehicles and the police department in respect to motor accidents; with industry and Departments of Labor and Industries for accidents in industry; with housing bureaus and fire departments in matters concerned with the construction of homes and other buildings; with the bureau of sanitary inspection about unsafe premises and unsanitary conditions; with the Division of Food and Drug Control in respect to poisonings. The list could be measurably extended.

A principal approach to accident prevention is through education, and because of training and tradition this brings the bureau of public health nursing and the divisions of maternal and child health of health departments actively into the problem. The approach to motor accidents, to accidents of industry and to public accidents is interpreted as a co-operative effort of government in which the health department has a significant responsibility. A further great class of accidents has to do with those that occur in the home, and this field is almost entirely an obligation of health departments. The rates that persist in 1946 are almost identical with those of 1900 in contrast to the great changes that have taken place in respect to tuberculosis and disease of the heart.

6. Home accidents constitute a continuing and fixed problem. In most localities they rank first in number of deaths among the four great classes of accidents. Definite information is lacking about disability, but the same is likely true. More employed workers suffer accidents off the job than on. A home accident is defined as a suddenly occurring bodily injury suffered in a dwelling or on residential property and resulting in disability of one week or more, hospitalization, or death.

7. The cost in deaths and disability from accidents are sufficient to make this a principal public health interest.

- (a) A division of accident prevention should be organized at state health department level.
 - 1. Its first obligation is co-operative effort with other agencies of state government.
 - 2. It would integrate the activities of other branches of the health department concerned with these problems.
 - 3. It would take direct responsibility for the problem of home accidents.
- (b) Local health departments should incorporate this activity in the major activities of their organization. This requires encouragement and direction from the state health department.
- (c) The principal need is for precise information. A reasonable and logical program for prevention depends upon this. Problems must be defined, the places that accidents occur must become known, and above all, a clear knowledge must be had of who gets hurt. For example, the 1946 data on accidents in Massachusetts show death rates of 113.5 per 100,000 population for infants under one year, 717.0 for those more than seventy-five years of age, and rates of 21.9 and 28.2 for the two-age groups of young adults. The stated objective is to be accomplished through application of the epidemiologic method to this community problem, in much the same way as is done for other mass disease phenomena.
 - 1. Data are needed for urban populations and for rural populations by age, by occupation, by geographic regions and other apparent distributions.
 - 2. The relative seriousness of the four main classes of accidents is to be determined.
 - 3. Deaths do not provide an adequate measure of the problem. Morbidity data and information on extent and cost of disabilities are almost wholly lacking.
 - 4. Above all, the causes of accidents must be determined.
- (d) A program of prevention and control based on other than clearly defined epidemiologic information invites dissipation of effort

and inadequate result. The development of a program conceivably follows these lines.

1. Epidemiologic surveys of representative situations 7 (c).
2. Survey of existing community program for safety education.
3. An educational program based on knowledge of the distributions of accidents and their causes.
 - (a) General public health educational measures.
 - (b) Consultation with other governmental agencies.
 - (c) Conference and consultation with all health department bureaus.
4. A field program by health departments directed towards accidents.
 - (a) as a part of public health nursing activities.
 - (b) Case study.
 - (c) Individual survey and education.

State Sanitary Code.

The present procedure for the enactment of public health law in Massachusetts is inflexible. It is difficult, if not impossible, to keep the public health law abreast of scientific advance. Changes in public health law, including technical details, can only be accomplished through acts of the General Court, with the approval of the Governor of the Commonwealth.

This problem has been solved in other States through the following mechanism: The state Legislature enacts the broad outlines of public health law, and delegates the responsibility for the enactment of regulations concerned with technical details to the Public Health Council of the State. Such regulations constitute a sanitary code, violations of which are misdemeanors, and are enforceable by the courts.

Such an arrangement permits great flexibility, both in meeting emergencies and in keeping the public health practice of the State abreast of scientific advance. At the same time, it reserves to the Legislature adequate power to control the lines along which such advances may proceed. The enactment of such legislation by the Commonwealth of Massachusetts would automatically make it possible to bring its health regulations up to date, and to maintain them at that level. (Appendix 17.)

MATERNAL AND CHILD HEALTH.

Maternal Health.

A gratifying reduction in maternal mortality has occurred throughout the United States in the past decade. Massachusetts has shared in this trend of a lowered mortality rate. There have been many factors contributing to this improvement. It is evident, however, that a further reduction in the mortality could be accomplished if certain minimal services were available so that it would be possible for every pregnant woman in the Commonwealth to receive adequate obstetrical and hospital care, irrespective of her ability to pay. It is obvious that this is not true at the present time. To emphasize this the following table is presented:

TABLE 17. — *Maternal Mortality of Hospital and Home Deliveries, 1942-1946.*

[Rate per 1,000 live births.]

YEAR.	Hospital Births (Per Cent.).	HOSPITAL DEATHS.		Home Deliveries (Per Cent.).	HOME DEATHS.	
		Number.	Per Cent.		Number.	Per Cent.
1942	89.5	119	1.59	10.5	59	6.7
1943	86.5	118	1.59	13.5	52	4.5
1944	90.2	102	1.44	9.8	38	4.9
1945	89.7	103	1.50	10.3	41	5.1
1946	97.0	81	0.86	3.0	47	14.7

It will be readily noted that home deliveries which account for 3 to 13.5 per cent of the total annual births contribute nearly one third to one half of the total maternal mortality. This is no doubt a reflection of the inability of some pregnant women to secure adequate hospital and medical care. Improvement in maternal health can only continue by increasing the scope of such care and service throughout the Commonwealth. To provide improved obstetrical care the following suggestions are made:

1. An obstetrical consultant, with necessary assistants, would be appointed by the Commissioner of the Massa-

chusetts Department of Public Health. The qualifications of such a consultant must be that he has been certified by the American Board of Obstetrics and Gynecology. The position must be full time with a minimal annual salary. It is hoped that he would receive an academic appointment within the obstetrical department of one of the medical schools of the commonwealth. In co-operation with the Maternal and Child Health Division of the State Department of Health, the consultant would develop a program to include the following:

(a) Supervision and further establishment of state prenatal clinics. He and his staff would examine all of the abnormal cases which are referred to such clinics by district health officers, local physicians and staff public health nurses.

(b) He should be accessible for free consultant service when requested by any physician of the State.

(c) When time and travel permit, he should on request of private physicians be available for assisting at difficult deliveries.

(d) In specialized maternity hospitals the necessary hospital beds for the proper care of the complicated cases should be available. The referral of such patients can only be done after consultation with those who have been originally responsible for the patient, namely, the private physician, local health officer, or public health nurse.

(e) State funds should be attainable for those patients who do not have the ability to pay for necessary hospital care.

(f) As the program develops and the need becomes apparent, full-time or part-time assistants and other personnel should be added.

2. The Bureau of Vital Statistics should be transferred from the office of the Secretary of State to the State Department of Health.

3. Maternal deaths, or any deaths where pregnancy might be suspected as being a contributing cause, should be reported within twenty-four hours to the Division of Hospitals, Massachusetts Department of Public Health.

A copy of the case history should follow within a period of forty-eight hours after the reporting of such a death. The Director of the Division of Hospitals should immediately arrange for the consultant to review with the attending physician the details of the maternal death. Together they would submit a résumé report to the Committee on Maternal Welfare of the Massachusetts Medical Society. A review of these deaths should be made biannually or annually by the Director of the Maternal and Child Health Division, the Director of the Division of Hospitals of the Massachusetts Department of Public Health, and the Advisory Committee of Maternal Welfare. Through the above groups an attempt should be made to classify the maternal deaths as either being medically preventable or non-preventable. A yearly report should be published. Funds should be made available for the cost of conducting such a program.

4. Funds should be available for postgraduate teaching of physicians and public health nurses in the field of maternal and child health.

5. The Division of Maternal and Child Health should be encouraged to increase its scope of activity, and a co-operative effort should be made to expand the program as outlined above.

Child Health.

In considering the present status of child health within the Commonwealth and the specific measures which might be taken further to improve it, reference should be made to the Report of the Massachusetts Health Commission which reported very fully on conditions up to 1935 in House Document No. 1200. This report considered the trends in communicable diseases and the need both for improving the reporting of cases and for extending the authority of the Department of Public Health in regard to isolation and quarantine regulations and the hospitalization of patients and payment for them.

With regard to the field of maternal and neonatal health, it was evident that the general level of obstetrical practice needed to be raised, and that there was especially

a need for improvement in the regulation of hospital practices with regard to the care of mothers and their newborn children. Better reporting of stillbirths was needed. The importance of deaths from prematurity was stressed, and recommendations were made for the development of a suitable control program. It was also felt that a detailed study of deaths in newborn children should be made by various areas and hospitals in the State. The leading causes of death from one to five years were discussed along with general measures which should be taken for their control. The general rôle of health services for children was outlined and the point made that all these services should be available to the entire population. The rôle of community health conferences in providing health supervision was outlined and certain minimum standards were stated. At that time there were about 106 such centers in the State. The figures at that time seemed to show that about 70 per cent of children under one year and about 10 per cent of children from one to five had a health examination in any one year. Sixty per cent of the infant examinations were done by private doctors.

Since 1935 several important steps have been taken for the improvement of maternal and child health in the Commonwealth:

1. The licensing of hospitals has been placed under the Division of Hospitals of the Department of Public Health. This makes possible a considerable degree of control.
2. A limited study of deaths in newborn infants has been made.
3. A premature program has been operative since 1937 with some improvement in premature mortality.

REPORTING OF NEONATAL AND INFANT DEATHS.

Under the present system existing in the Commonwealth for reporting deaths, too much time elapses between the time the death occurs and notification of the community to which the death is allocated. Three months may elapse before the report is made and a community is able to take action in the matter. It is

obvious that any attempt to make early investigations of maternal and infant deaths is vitiated by such a system. A similar state of affairs is observed for the reporting of births. Not only is there delay, but it is at present impossible to secure from the birth certificate the information which would permit more effective efforts to reduce mortality. Under the present interpretation of Massachusetts law, even statements regarding the birth weight of a child are considered confidential information. In addition, birth certificates cannot be impounded and their contents thus kept confidential. A reasonable improvement on the present conditions would be effected if the new birth certificate, recently developed by the National Office of Vital Statistics, were put into effect; the law against the impounding of birth certificates was abrogated. The State authorities would thus be provided with confidential information within a reasonable time regarding births and deaths occurring within the Commonwealth.

NEONATAL HEALTH.

From 1935 to 1945 the mortality rate in newborn infants dropped from 40 to 22 per 1,000 live births. The reduction of mortality for this period of life was proportionally greater than that for deaths in the whole of the first year, where the mortality dropped from about 48 to 31.6 per 1,000 live births. These figures are better than the national rates which averaged 39.4 for the years 1941-1946. At the same time, because of population increase, the total number of infant deaths remained practically the same. In 1941 the Massachusetts Department of Public Health was given power to license hospitals, and thus set improved standards for the conduct of these institutions. This improvement in mortality would seem to be related to the efforts made to better the conditions in hospitals caring for the newborn and the premature infant. Furthermore, the use of sulfa drugs and penicillin has lessened the mortality from such infectious diseases as pneumonia.

The considerable increase in the number of births occurring in hospitals has increased the strategic im-

portance of the Massachusetts Department of Public Health in improving the chances of survival for newborn infants. In 1935 about two thirds of births in the State occurred in hospitals. By 1946 this figure had risen to about 98 per cent.

The Department has very wisely considered that the raising of hospital standards was a medical rather than a police problem. It has recognized the importance of education rather than coercion of hospital staffs and personnel. It has closed a small number of substandard institutions, and been successful in improving conditions in others. Its educational and supervisory efforts have been greatly curtailed by lack of supervisory personnel. The Department is at present revising the licensing regulations. If they are wisely drawn, and if enforced by adequate supervision and the co-operation of the medical profession, these regulations should further provide for the safety of mothers and their newborn infants.

Massachusetts has pioneered in the battle against deaths from prematurity. As early as 1937 the Department of Public Health initiated a program for the care of the prematurely born infant. Throughout the State 48 centers were established especially equipped to care for infants under 5 pounds weight at birth. At the same time, the reporting of premature infants to local boards of health was made mandatory, and local boards of welfare were legally authorized to pay the cost of transporting premature infants to suitable centers, and providing for their hospital care when the parents were unable to do so. Premature mortality has been reduced as the following statistics will show.

TABLE 18.—*Deaths of Prematures in Maternity Hospitals, Massachusetts, 1937–1945.*

YEAR.	Total Cared for.	Number Born in Hospitals.	Mortality (Per Cent.).	Transferred to Hospital.	Mortality Rate.
1937 . . .	1,831	1,731	40.	100	46.
1940 . . .	2,070	1,880	35.	190	41.
1945 . . .	2,500	2,406	32.	94	37.

Thus since 1937 the total number of prematures cared for in hospitals has increased, and the total mortality has dropped from 40 to 32 per cent. The mortality for infants transferred to hospitals after birth has been consistently higher, but has shown a similar decline. The proportion of deaths in prematures weighing less than three pounds at birth has increased.

In addition, the Division of Maternal and Child Health has provided for the instruction of nurses who were later to work in these centers for the care of the premature infant.

Further reduction in deaths from prematurity, and there were 1,112 of these in 1946, depends to a considerable extent on securing improved statistics on prematurity. At the present time, the Division of Maternal and Child Health does not know with accuracy the total number of premature births that occur in any one year. Data collected locally are not transmitted to them. As a result, the number of premature births is known only indirectly through totalling the number of prematures reported as cared for to the Division of Hospitals.

Important causes for neonatal (under one month) deaths are congenital malformations and birth injury. The former, which caused 466 deaths in 1945, are not susceptible to direct control; however, recent research on the role of such diseases as German measles in the mother early in pregnancy, and the effect of an inadequate maternal diet, has shown that such factors may predispose to congenital malformations. It is therefore obvious that efforts to reduce the incidence of congenital malformations are directly related to improving the health of mothers during pregnancy. Indigent mothers are most apt to be concerned. The reduction of birth injuries, which constitute the third most important cause of infant deaths, is a direct obstetrical problem.

The definition of a premature infant as one weighing less than 5 pounds at birth makes it, at present, difficult to compare Massachusetts statistics with those from other parts of the country. Outside this State $5\frac{1}{2}$ pounds is

the official figure. It would be helpful to have Massachusetts figures correspond with those for other States. On the other hand, the vigor of prematures weighing over 5 pounds is usually such as to enable them to do well at home. It would not be advisable to increase the present bill for hospitalization by including children weighing 5 pounds or over. This is no small consideration, since the present stringent condition of hospital finances means that local boards of welfare are being increasingly called upon to pay for the hospitalization of premature infants. There is also a need to secure some standard interpretation of the responsibility of boards of welfare, since local practice regarding payment for such hospitalization varies widely. It might even be wise eventually to make this a concern of the Department of Public Health rather than the Department of Public Welfare.

STUDY OF CHILD HEALTH SERVICES.

In connection with the present facilities for the care of the newborn in Massachusetts, certain figures taken from the Massachusetts Study of Child Health Services are of significance in pointing the way to improving present conditions. At the time of this study (1946) there were 186 hospitals in the State. Of these, 151 were general hospitals of which 139 admitted maternity cases. There were 79,903 births in these institutions and 750,215 days of care to newborn infants, an average of 9.4 days per child; 48.8 per cent, or nearly one half of all the births, occurred in hospitals of from 100 to 250 beds' capacity. These hospitals reported 3,774 bassinets and 305 incubators, giving a ratio for the State of 1 incubator to every 12.3 bassinets. This ratio is slightly lower for the 18 hospitals in the State having from 5 to 24 beds, where it is 1 incubator to every 18.2 bassinets. Certain characteristics of this group of hospitals tend to indicate the direction which efforts to improve conditions in other hospitals should take.

All hospitals in the State which are for the newborn

have a separate nursery set aside for their care; 55.8 per cent of all the births occurred in hospitals having a separate nursery for sick or suspect newborns, and yet only 41.1 per cent of these institutions were so provided. Separate accommodations for sick infants or infants suspected of infection should be more generally available.

Since 1936 the infant mortality rate (number of deaths under one year per 1,000 live births) has declined from 46.6 to 30.9 in 1946. Expressed in this way one may not grasp the significance of the reduction in deaths, but it actually means that 1,520 babies lived through the first year who would have died if the 1936 rate prevailed in the latter year. In 1946, 74.2 per cent of the deaths of infants occurred in the first month of life; 85.2 per cent in the first three months; and 92.3 per cent in the first half year, which emphasizes how the chance of survival increases with age.

The previous section has stressed the importance of prematurity, congenital malformation and injury at birth as the leading causes of death during the first month of life. Next in order, which are of equal or greater importance in the age group one to twelve months, are the pneumonias, which accounted for nearly 10 per cent of all infant deaths in 1946; diarrhoea diseases, accounting for about 5 per cent; and accidents. Pneumonias in infants are commonly secondary to other infections, such as measles, whooping cough and ever common colds. Greatest precautions should be taken to prevent the exposure of infants to these and other acute infections, and prompt medical attention must be sought if they do occur. Inoculations against whooping cough may be commenced as early as the fourth month to help prevent this danger disease of infants.

The diarrhoeal diseases, which used to take the greatest single toll of life during infancy, have been dramatically reduced by the improvement in the quality of milk; by commercial pasteurization and by boiling the baby's milk; by the sterilization of bottles and nipples; and by home sanitation. The teaching of mothers the simple tech-

niques of the proper care of the baby, and of home sanitation, has played a major rôle in reducing sickness and death from intestinal infections.

As our knowledge of psychology has increased we have become more and more aware of the importance of the early months and years of life as those during which permanent habits become fixed and character is formed. Guidance in the proper means of disciplining children, in directing food habits, in dealing with tantrums, and in numerous other matters may have a profound influence in determining the kind of person who grows up. The proper care, feeding and nurture of a child is not instinctive, but is something that must be learned.

The great need for the presentation of the life and health of the baby, and its development into a well-adjusted child and citizen, depends largely upon wise, understanding parents. They must have access, through private or public medical services, and nursing instruction. It is the responsibility of the local community to provide such services, for those who cannot make private arrangements, through readily accessible, properly staffed well-child conference centers, and by providing for public health nurse home visits, made under medical supervision. This is our recommendation.

The most important causes for loss of child life from age one to fifteen years in the Commonwealth in 1945 were accidents, pneumonia and influenza, heart disease, tuberculosis and appendicitis. A reduction in these is primarily dependent on the education of parents and all those responsible for the care of children. Since accidents are a leading cause of death, parents must be made aware of the dangers in the environment of the growing child. Some action has already been taken to reduce accidents. The city of Boston in 1948 carried out an intensive safety program slightly before the Metropolitan Life Insurance Company began a nation-wide educational campaign. These efforts should be duplicated in all parts of the Commonwealth, and are in large measure a responsibility of the health authorities and the other state agencies. Other

matters that need to be stressed are the significance of acute abdominal pain, the necessity for early medical attention, and the importance of case-finding facilities for heart disease and tuberculosis.

The control of communicable diseases by childhood immunization, depends, among other things, on the maintenance and proper extension of present immunization programs against smallpox, diphtheria and whooping cough. In a later section it will become evident that present efforts to immunize the child population are far from satisfactory. The use of immune globulin for the prevention or modification of measles has put another important weapon at the disposal of the family doctor.

TOTAL MEDICAL SERVICE TO MASSACHUSETTS CHILDREN.

If it is desired to improve the amount and quality of health service available to Massachusetts children, it is necessary to know the extent to which individuals and agencies furnish such services, and how the amount of service varies in various parts of the State. Until recently such information has not been available. However, in 1946 the Massachusetts Study of Child Health Services surveyed the State, and determined the amount and kind of service now being rendered to children under fifteen years of age by hospitals, community health services and medical practitioners. Data were tabulated by health districts as well as by counties grouped according to their Metropolitan character. The latter have not proved to be too informative with regard to Massachusetts. However, Barnstable, Nantucket and Dukes counties are classified as isolated rural counties, and it is possible to show for this part of the State a significantly smaller amount of service to children in this area.

According to the figures of the Massachusetts Study of Child Health Services, there were on an average day 19,627 children under medical care in the State. The accompanying table shows the proportional number of children visited by medical practitioners, visiting clinics

or under care in hospitals. At the same time rates of care per day per 1,000 children are given for comparative purposes.

TABLE 19. — *Children under Medical Care on an Average Day.*

SOURCE OF CARE.	Number.	Number per Day per 1,000 Children.	Number per Day per 1,000 in Isolated Counties.
Visited by doctors	14,538	15.06	14.34
Visiting clinics	803	0.83	0.37
Under care in hospitals	4,286	4.44	1.95

These figures show that about three quarters of the children under care in any one day are being visited by physicians. Slightly less than one quarter are in hospitals, and about 4 per cent are visiting clinics. The rate for total medical care to Massachusetts children is 20.3 children per day per 1,000. This compares exceedingly well with the average for 8 representative States in the country which had a rate of 12.9.

The limitations of this Report do not permit a discussion of the hospital care provided to children in the Commonwealth. The amount of service rendered by hospitals is fairly uniform throughout the State except in isolated counties. Proper standards of care are the continuous responsibility of the medical profession and Massachusetts Department of Public Health through the Division of Hospitals.

The general practitioner is by all odds the most important individual rendering medical service to children. Of all the visits made by practitioners 78.6 per cent are made by family doctors. Pediatricians account for 11.3 per cent of all visits, and other specialists for 10.1 per cent. In isolated counties the proportion of general practitioner care is even higher. The rate of total service to children by doctors, 15 children per day per 1,000 children, compares very favorably with the highest rate in 8 representative States, — 15.8.

A very significant proportion of service to children is for health supervision. Out of 14,538 children, 4,377, or 30.1 per cent were visited by doctors for this purpose. The rate of service for the whole State was 4.9 per 1,000 children, but for isolated counties only 3.4. About three fourths of all health supervision is provided by general practitioners, and slightly less than one quarter by the pediatrician or child specialist. Visits to well-child conferences constitute about 8.4 per cent of all health supervision of children. The rate of service for these is .42 per 1,000 children compared with .28 for isolated counties.

The general practitioner serving children spends slightly less than one third of his time for health service. By contrast, the pediatrician spends nearly two thirds, or 61.3 per cent, of his time on health supervision.

The medical practitioner is therefore the most important factor in furnishing health service to children. Pediatricians, both in numbers and in terms of services rendered, play a relatively minor rôle. The more rural a community, the less likelihood there is that pediatric service will be available. Attempts to improve the amount and quality of medical service to children should therefore be focused on the general practitioner. It is the responsibility of the pediatrician to initiate and give continuing support to all programs for educating medical practitioners in modern pediatric techniques. This is particularly important with regard to physicians now working in schools and well-child conferences. The Division of Maternal and Child Health has already initiated an educational program for these two categories of physicians. This should be expanded. More attention should be paid by medical societies in the State to the introduction of pediatric subjects at medical meetings.

HEALTH SUPERVISION FURNISHED BY WELL-CHILD CONFERENCES.

The Report of the Massachusetts State Health Commission in 1935 enumerated certain principles and stand-

ards for the provision of health service to children. These were that —

1. Health service should be available to all children.
2. Well-child conferences should ordinarily furnish service to the indigent.
3. The same individual or agency should, whenever possible, render service both in health and illness.
4. Health service should include periodic physical examinations, health advice and immunization.
5. The detection of physical defects and follow-up by the Public Health nurse for their correction should be the responsibility of well-child conferences.
6. Services should usually be decentralized.

In 1934 there were 106 centers maintaining well-child conferences throughout the Commonwealth. By 1946, this number had risen to 240.¹ In the Report year 7,283 sessions were held at these centers throughout the State; 51,816 children, or 13.7 per cent of the population under five years of age, made 147,640 visits to these conferences, or 2.8 visits per child. There were nearly twice as many conferences maintained by official as by voluntary agencies (4,655 official and 2,628 voluntary sessions). In the more rural parts of the State there were more voluntary agencies furnishing such health service.

With 2.8 visits per year per child, and a maximum of 4.9 in one health district, it would hardly indicate that health supervision was as frequently available as would be desired. There are still a number of communities in the State, with populations as large as 15,000 to 50,000, maintaining no medical well-child conferences. In numerous rural communities state-supported clinics are maintained, but sessions may not occur oftener than once or twice a year.

The type of service available in conferences varies considerably. At 81.8 per cent of the sessions mothers receive advice on feeding and care from a physician. Nearly all of them (99.7 per cent) report that follow-up advice by a public health nurse in the home is available. The

¹ Data from Massachusetts Study of Child Health Services.

extent to which such service is used is not clear; 61.5 per cent of the sessions report that nutritionist advice is available. However, in most instances this can be interpreted as meaning that the nutritionist attached to the district health office can be called upon. Psychological or psychiatric consultation is procurable at 19.9 per cent of sessions.

It is at present impossible to say just what proportion of the total child population is being immunized against the common communicable diseases. At least so far as the communities in the Greater Boston area are concerned, immunization procedures often do not conform to the standards of modern public health programs. It is frequently the policy to postpone diphtheria immunization until after the age of one year.

TABLE 20.—*Extent of Immunization in Well-Child Conferences.*¹

IMMUNIZATION.	Total Patients.	Total Immunized.	Per Cent Immunized.
Smallpox	11,105	5,229	47.1
Diphtheria	10,700	3,128	29.2
Whooping cough	9,561	2,716	28.4
Tetanus	1,346	282	21.0

¹ Refers only to routine immunizations in conferences where specified immunization is performed routinely and number immunized is known.

The frequency with which immunization is done varies greatly throughout the State; for example, in District 3 (Metropolitan Boston) in 72.5 per cent of sessions children are immunized for smallpox, whereas in District 1 (Barnstable, Nantucket and Dukes counties) only 7.6 per cent of sessions afford such service. Less marked variations are seen in other parts of the State.

Of the physicians conducting well-child conferences, slightly less than one fifth are health officials, and the balance is equally divided between pediatricians and general practitioners. Three per cent of the pediatricians, and 11.6 per cent of the general practitioners, are reported as receiving no renumeration for their services. Voluntary agencies commonly pay physicians more than do

official agencies. There is considerable variation in the rates of pay per session (from \$3 to \$35.22 for pediatricians, and \$4.14 to \$22.50 for general practitioners).

One may conclude from these data that there is considerable need for revising current practices in well-child conferences. Service should be available more regularly and frequently, immunization procedures should conform to modern practice, and some satisfactory set of standards should be set for the remuneration of physicians.

Better health service for the indigent is needed. If more defects were corrected it could mean a considerable saving in future medical expense for the Commonwealth.

Under present circumstances there are many well-child conferences operating without supervision. The doctors who so faithfully serve in them need inspiration and direction. The efficacy of the present program needs to be evaluated. The problem would best be approached by the development of local health services of adequate size. Until this is possible it would be helpful to employ pediatricians working under the Division of Maternal and Child Health responsible for pediatric consultation, and for the regular inspection and supervision of well-child conferences. Because such regulation is not now available there is no appraisal of results and no incentive to do better work.

Many well-child conferences in the State are now small, infrequently need regulation and are too decentralized. They need a greater degree of medical surveillance. It is the feeling of your Committee that a concerted effort should be made to link them either to the local health department, or the community hospital. The latter choice is preferable, since it is the place where the child can be given care in sickness or in health.

RECOMMENDATIONS.

In order to effect an improvement in the health of children throughout the Commonwealth your Committee would recommend the following:

1. That current practices concerning the reporting of

births and deaths throughout the Commonwealth be revised. Specifically, this should involve —

(a) The adoption of a new birth certificate on which would be recorded, in addition to present data, the birth weight and length of the child, previous births in the family, multiple births and the birth order.

(b) The abrogation of the present law against the impounding of birth or death certificates.

(c) Changing the birth weight defining prematurity from 5 to $5\frac{1}{2}$ pounds, but maintaining the present regulations regarding the transportation and payment for the hospitalization of such infants.

(d) The direct reporting of births and deaths by hospitals, not only to the community where such occurred, but also to the place of residence.

2. The development of adequate local health services throughout the State.

3. The employment of well-qualified medical personnel to be responsible for the regular supervision and improvement of well-child conferences throughout the State. Such conferences should be more often under the direct control of the local medical profession in the community hospital, or under the official health agency.

4. The continual expansion of the present program of medical education now maintained by the Division of Maternal and Child Health and the Massachusetts Medical Society. Increasing emphasis should be placed on the improvement of pediatric education in medical schools, and the extension of the pediatric programs of medical societies. There is also great need for further education of the public through hospitals, clinics, nursing agencies and schools regarding accident prevention, the duties of motherhood, and the meaning of health.

5. The extension of health services for children in rural areas of the State.

School Health.

The school health program is not currently a complete health program. The health program should provide

adequate health education; it should undertake the supervision of school environment; it should assume responsibility for the control of communicable diseases within the schools; and it should provide health supervision of each individual child, screening out those children in special need of medical care, and encouraging and facilitating access to such care.

This present report borrows freely from the Report of the Special Commission to Study and Investigate Public Health Laws and Policies (House, No. 1200), to which reference should be made. It has seemed expedient here to present a few specific recommendations which relate to current, prominent defects in the school health program of the Commonwealth.

It is evident that a "fundamental weakness of the entire program of school health services is that the administrative unit responsible for the employment of physicians and nurses is too small to obtain the personnel and supervision which the program needs. Although superintendency districts may employ such personnel, few have availed themselves of this opportunity. Moreover, even these districts are often too small to afford or attract adequately trained personnel to this field. The ability to combine into larger administrative units, at least for the employment of supervisory personnel, is essential if school health services are to be more uniformly effective." (House, No. 1200, 1937).

Wherever a qualified local health unit exists, it is recommended that the school health program be under the supervision of such a unit. In general, however, it is recognized that local conditions vary considerably. In some communities the program has been more effectively developed under the auspices of the school board than it could have been by the part-time board of health. "There can be no clear-cut and definite division between the various phases of the school health work. If it is to be truly effective it must be an integral part of the community health program. It is essential, therefore, that there be the closest co-operation between the school department

and the board of health. Failure to recognize this principle has been one of the most important factors in preventing the development of more effective service throughout the country." (House, No. 1200).

RECOMMENDATIONS.

I. *Massachusetts School Health Council.*

This interdepartmental council, comprised of members of the Department of Education, the Department of Public Health, and the Department of Mental Health, was created in 1940 by the Commissioners of Education and Public Health. Its purposes are to formulate policies pertaining to the school health program, to act as adviser and co-ordinator to private agencies in their relation to the school health program, and to stimulate increased interest and activity in such a program. It has functioned effectively, co-operatively, and harmoniously for eight years, and its work and recommendations should be endorsed.

II. *State Subsidy.*

A state subsidy of not less than one half the sum expended locally for school health programs should be made available to the administrative units, in order to meet the standards prescribed by the Massachusetts School Health Council. If it is not possible to extend this subsidy to the large cities, it is important at this time to extend it at least to the smaller towns of the Commonwealth as a means of further raising the standard of school health services.

III. *Health Education.*

Education for health and safety, including physical education, should be an integral part of the education of all children from nursery school through senior high school. The aim of this education should be to develop in each child habits and attitudes of health and safe living. The Departments of Education and Public Health should recommend the minimum time allotments

necessary to accomplish this at different age and grade levels, and they should provide appropriate teaching material.

IV. Physical Examinations.

Each school child should be separately and carefully examined by a qualified physician in such manner and at such intervals as may be deemed advisable by the Departments of Public Health and Education.

In the present situation, annual physical examinations are required by law, and inadequate, incomplete appraisals are often the result. A complete record of each child's physical examination, and other pertinent medical data, should be kept by each school on a standard form prepared by the Department of Public Health, in consultation with the Department of Education. The physician should re-examine children who are referred by the teacher or nurse for frequent absence from school, or for any heretofore unnoticed physical, mental, or emotional defect.

V. Vision and Hearing Testing.

The present school examination law and the proposed revision require that the testing of vision and hearing in the schools be done by teachers. Not all teachers are qualified for carrying out tests. Difficulties also arise through the interruption of the regular teaching program.

The Massachusetts School Health Council recommended to school superintendents in March, 1948, that one person be trained to do the testing. This person may be employed by one school health unit for the period of time necessary to complete the tests, or one person may be employed by several units, thus providing full-time employment. The Massachusetts School Health Council further suggested, in its recommendations, the minimum qualifications for a person so selected, and urged that the group audiometer and the Massachusetts Vision Test be considered as the best equipment for such procedures. It is recommended that these recommenda-

tions of the Massachusetts School Health Council be adopted.

VI. *Physical Education — Competitive Sports.*

All school children participating in competitive sports should be examined by the school physician to determine their physical fitness for such competition, and those found unfit should be excluded from participation. This examination should be in addition to the regular physical examination as recommended in Article IV.

VII. *Tuberculosis in School Personnel.*

No person suffering from tuberculosis in a communicable form should be employed at any school in the Commonwealth. All personnel who have any contact whatever with school children should present satisfactory evidence to their school authorities that they are free of this disease. The evidence should consist of a physician's statement to this effect, and should include a chest X-ray report from a qualified physician, and any additional laboratory tests and clinical examinations that may be necessary. Such evidence should be submitted at the beginning of employment and at such subsequent times as are recommended by the Department of Public Health. There should be no exceptions to this procedure.

VII. *School Nurses.*

The greatest obstacle to the development of a high type of nursing service in the schools has been the absence of any required standard of employment. It is most strongly recommended that all school nurses be graduates of an approved school of nursing, be registered nurses in the Commonwealth, be trained in public health nursing previous to or after employment, and work in a generalized program (*i.e.*, nursing service for prenatal, natal, postnatal, infant, preschool and school groups) under qualified supervision in order to have uniform standard care.

IX. *Preschool Registration and Examinations.*

Some communities now carry on an adequate program for preschool registration and examinations. It is recommended that the administrator of the school health program be responsible for the organization and conduct of a clinic for a complete medical and dental examination and immunization of the preschool child, if the family cannot pay for health supervision, or if the community does not provide a well-child conference.

X. *Standards for Schools and Nurseries for Infants and Preschool Age Children.*

In various communities in Massachusetts, nursery schools, day care centers, day nurseries, and kindergartens are conducted by either public or private agencies. No uniform health standards are at present provided. The few kindergartens conducted in public schools presumably conform to the required school health standards in regard to such matters as the physical examinations and safety provisions. Day nurseries are licensed by the local boards of health (chapter 111, sections 58–62, Acts of 1938), but few boards have adequate standards. The provision during the war for expanded school services for children of employed mothers under federal security funds provided for health standards, but few of these services exist now.

The Day Care Center Committee which was active under the Committee on Public Safety during the war has continued its service, but has no backing, legal or otherwise, for setting up health standards. Thus there is a present need for health standards for these institutions, and it is recommended that the same health standards, legislative or other, that apply to schools be made applicable to community services, conducted under both private and public auspices, for infants and preschool age children.

Crippled and Handicapped Children.

This part of the communication is concerned with the crippled child, using the term in the broadest sense, and would be interpreted to include not only those who are crippled, but those who have diseases which ordinarily lead to crippling. In this category, for example, are the so-called "orthopedic cripple," including those with cerebral palsy; children affected by cardiovascular and renal diseases, including rheumatic fever; the deaf and those with impaired hearing; the blind, including those with impaired vision; those with speech defects; and similar conditions.

The primary objective of the Commonwealth should be to effect the maximal rehabilitation of those children who have chronic crippling conditions. Such rehabilitation is necessary not only for humane and social reasons, but for economic reasons as well. Many children, who if left in their crippled state would be nonproductive, can be restored to economic independence by rehabilitative measures and make their contribution to society.

The main emphasis of the program for the handicapped in Massachusetts has been in case-finding and to supply services for the medically indigent, and this is as it should be. In this connection it is well to emphasize that many families are financially able to provide medical services for illnesses of short duration, but are unable to meet the expenses of rehabilitation in many crippling conditions, since many of them require extensive hospitalization and long-continued care. In providing care for crippled children, such care should be planned for all children regardless of financial status, since only in this way can standards be maintained. To separate medical care for the indigent from those who can pay would be to set up double standards in the practice of medicine.

It should be the objective of the Department of Public Health to see that all of our citizens obtain the best medical care that is available, and its efforts should be directed

toward improving such medical care. With this in mind the program for the medically indigent should be co-ordinated with those agencies and hospitals which render service to all of our people. Massachusetts is particularly fortunate in having charitable agencies which have personnel facilities second to none. By supporting the care of the medically indigent in such agencies, the Commonwealth will not only insure excellent care for these patients, but will aid in maintaining and increasing the strength of such institutions so that they will be available for all our citizens, whatever their financial status. The Department of Public Health should be concerned with co-ordinating the activities of all agencies, and should aid in filling the gaps that exist.

Another consideration that must be recognized is that any improvement in medical care depends upon increasing the number and capabilities of the personnel in medicine as well as fostering research in the study and prevention of disease. It is quite apparent that by supporting the care of the medically indigent in the existing charitable hospitals which are now concerned with teaching and research, the level of general medical care in the community will be raised.

HOSPITAL RESOURCES.

While it is recognized that the existing voluntary hospital facilities for the care of crippled children, including rheumatic heart disease, should be utilized to the fullest possible extent, it is obvious that such institutions in Massachusetts are unable to operate at full capacity unless adequately financed. As a large proportion of patients suffering from this disease come from the lower income groups, this means that a great proportion of care must be furnished at public expense. Therefore, aside from families of children who are able to pay for care, the treatment for the largest group must be provided from public funds. At the present time the Department of Public Health is paying for such treatment at private

hospitals to the limit of its resources. An increase in federal grants may be expected only if the funds appropriated for this purpose are increased.

It is this Commission's recommendation that application be made by the Department of Public Health for an added state appropriation for the care of crippled children, including rheumatic fever, so that more of these patients can be cared for in voluntary hospitals. Since an increased allotment from the federal government to Massachusetts will mean that these funds will have to be matched by state appropriations, it is recommended that the Department seek increased appropriations for its crippled children, rheumatic fever and rheumatic heart programs.

Even if the maximum amount is obtained from the Children's Bureau, and, in addition, state appropriations are substantially increased, there will still remain many crippled children who cannot be cared for at existing charitable hospitals. For this reason the State Department of Public Health, through its own Lakeville and North Reading Sanatoriums, should provide facilities for the care of such crippled children. This care at the state sanatoria is not only of high quality, but has been both economical and effective. Lakeville Sanatorium has for years furnished orthopedic treatment for children and adults with extra-pulmonary tuberculosis, and can easily meet the present needs for this group of patients. As this institution has for years provided high grade orthopedic care, the 1948 Legislature authorized the admission to Lakeville of other children with crippling conditions. This makes it possible to care for a substantial number of children with chronic crippling conditions for which adequate provisions are not available in general hospitals.

An outstanding job is being done in the care of children with rheumatic heart disease at the House of the Good Samaritan. Since the Good Samaritan is doing such an excellent job in providing care for rheumatic fever patients, there is no reason why these facilities should not be made available to patients for whom the State has

assumed responsibility. Similarly, the facilities of the Children's Hospital, and other voluntary general hospitals, should be utilized by the State for the benefit of state patients. In this way the State would not only be providing for the care of patients for whom it has assumed responsibility, but would be supporting the good work now carried on in these institutions.

PUBLIC AND PRIVATE HOSPITALS.

In planning for the care of the crippled child it is necessary to keep in mind not only the immediate needs of the Commonwealth, but to plan for a period of at least five years. Thus, it would be shortsighted to either send all of the cases for whom the State has assumed responsibility to voluntary hospitals, or to hospitalize all such cases in state sanatoria. It seems obvious that before new facilities are developed existing facilities of all categories should be utilized to the fullest. Certain of these cases are preferably hospitalized in the voluntary hospital, while others are appropriately being cared for in state hospitals. The planning for the care of the different categories of crippling conditions must be the joint responsibility of all agencies providing care for these patients. With the appropriation of additional funds it would be possible for the State to send cases to existing voluntary hospitals in addition to making use of those now available at North Reading and Lakeville. Certainly the State should support those voluntary hospitals which, at the present time, are used for teaching, for the following reasons:

1. Teaching hospitals employ personnel of the highest quality. Since it is good economy to continue hospitals of more than minimum size in order to lower the overhead, the placing of state cases in such institutions will assist these institutions in serving other patients and in teaching as well.

2. Voluntary teaching hospitals are responsible for training doctors, nurses and other personnel who are badly needed if adequate medical services are to be made

available. Certainly the State should do all it can to maintain teaching facilities for teaching of this type of personnel at as high a level as possible.

3. Because of the low salaries paid to state institution personnel and their remote location, it is often difficult to staff these hospitals, and many beds must remain vacant because of lack of necessary help. Although voluntary hospitals have also felt some shortage of personnel, this lack has not been as acute.

4. By enabling voluntary teaching hospitals to carry on their work, the State will be supporting teaching and other activities in these institutions which in turn will benefit all of the people.

Beyond question certain types of cases have been demonstrated to be better off in state institutions than in voluntary hospitals. The classic example of this is the care of tuberculosis, both pulmonary and extra pulmonary. In this type of work state institutions have pioneered with ensuing reductions in the prevailing tuberculosis rates. Similarly, there are other conditions for which state hospitals have demonstrated their value beyond that which is ordinarily available in the voluntary hospitals. Perhaps the greatest single need at this time is the provision of hospital care for the chronically ill. Certainly crippled children with long-term illnesses requiring extended care can be more economically cared for in state institutions than in a voluntary hospital. Another need is the provision of additional facilities for the cerebral palsy patients for whom there is insufficient institutional care in the Commonwealth.

HOSPITALIZATION AND THE SERVICES FOR CRIPPLED CHILDREN.

It is well to mention that, in general, the program of Services for Crippled Children in the Commonwealth, which has been primarily concerned with the orthopedic cripple, and more lately with rheumatic fever, has followed the plan of hospitalizing patients in existing voluntary hospitals. Recently, because of the availability of beds

at Lakeville, due to the decreased prevalence of extra pulmonary tuberculosis, legislation has been secured for the hospitalization of other types of cases at this institution. Since 1937 patients with poliomyelitis have been admitted there. Authorization for admitting children with cerebral palsy at Lakeville was granted by the Legislature and signed by the Governor on July 23, 1941, but this program has never been developed. In 1948 legislation authorized the admission of other types of crippled children to Lakeville.

The Commission believes that the cerebral palsy program authorized in 1937 should be instituted as soon as possible, and that the Department should seek the necessary appropriation for additional facilities if these are needed. While it is proper for the Department to make vacant beds at Lakeville available to hospitalize crippled children at that institution, at the same time, the Commission wishes to reiterate the need for making additional funds available for hospitalizing cases in the teaching hospitals for reasons cited elsewhere in this report.

In commenting upon the status of existing state institutions in this program, we should mention the Massachusetts Hospital School at Canton, which is under the Department of Public Welfare and was established for the "care and education" of "crippled and deformed children" up to eighteen years of age. In such a hospital school emphasis should be placed upon (1) the education of the handicapped individual, making sure that the education is excellent through high school, so that the child may be admitted to college if he is capable of such activity; (2) vocational training, so that the individual may develop self-support if possible; (3) therapeutic services — medical supervision, physical therapy, occupational therapy, speech training, etc. Emphasis should not be placed upon surgical rehabilitation, which might just as well, or better, be provided by referring the patients to our existing teaching hospitals. At the present time it is reported that the "teaching of

some high school subject" is given. Education should be strong in such an institution; that is its real function. It should not be primarily a hospital; it should be a school adapted to the rehabilitation of the cripple.

RHEUMATIC FEVER.

Since rheumatic fever causes more heart disease complications in children than all other types of heart disease combined, this has been a disease for which the Department has planned to give services, together with other voluntary agencies. The rheumatic fever project was started by the crippled children grant made available from the Children's Bureau of the Federal Security Agency. Federal funds are supplied for the clinic and follow-up services, and at the present time a weekly clinic is held at the North Reading Sanatorium to serve the northeastern part of the State. The personnel on recommendation of the Children's Bureau consists of a consultant in rheumatic fever, a pediatrician, a nurse and a social worker. A full-time laboratory technician is to be added. In addition, this clinic is used as a teaching clinic for the training of physicians in the care and administration of rheumatic fever programs. It is recommended that in organizing other clinics in the Commonwealth there should be included a local physician and a consultant in rheumatic fever in addition to the ancillary help, namely, the nurse and the social worker. The best man available in the local community should be appointed as physician to the rheumatic fever clinic. He should, under ideal circumstances, be a pediatrician approved by the specialty board, or an internist approved by that specialty board. Should such a local person be lacking, a physician of experience should be appointed. This physician would hold clinics under the direction and supervision of the Department and the Crippled Children Services, weekly, or at such intervals as might be required. At regular intervals a consultant in rheumatic fever would attend the clinic and would receive the assistance of the social worker and other personnel if necessary.

The clinics should be held in a hospital where existing laboratory and X-ray services are of good quality and may be utilized for the purpose of the clinic. By the participation of the local physician in such a clinic a pattern similar to that established for crippled children clinics would be formed which has proved to be economical and efficient, and the consultant acts as an educator and renders more highly specialized services when these are required.

For hospitalization, rheumatic fever patients should be sent to existing facilities which are nearest the patient's home whenever possible, provided that such facilities are adequate for the care of rheumatic fever. It has been the experience of experts on rheumatic fever that to hospitalize patients with this disease in a general ward is not in the best interest of the patient, since he is apt to develop cross infection. For these reasons special hospitals have been developed, and the Good Samaritan is an example of a hospital which can give excellent service in this field. However, because of inadequate funds the State has not been able to send patients in sufficient numbers to take advantage of the facilities offered at this institution. As has already been recommended, additional funds should be made available for this purpose. Similarly, the State needs additional funds to hospitalize cases of rheumatic fever at North Reading for the patients coming from that area. It is well to keep in mind that state institutions, whenever possible, should be utilized for the teaching of personnel, not only physicians but also nurses and attendants. However, because of their remote location it is often impossible to use such facilities for teaching to the fullest extent.

CEREBRAL PALSY.

One of the needs in the Commonwealth is a program for patients with cerebral palsy. In considering such a program, it must be understood that children with cerebral palsy are a heterogeneous group and include those who can live a normal, or essentially normal, life with

little or moderate supervision and therapy; those who, after extensive measures of rehabilitation, either can or cannot develop social and economic independence; and those of great mental deficiency in which no therapeutic measures are helpful and of which the problem is one of custodial care. There are all grades in between these groups.

Certain general needs in the care of such patients should be listed.

1. *Diagnostic Surveys — Hospital and Out-Patient.* — This would necessitate medical and ancillary personnel capable in this field so that a child might be completely evaluated, his mental and physical status determined, and so that the prognosis may be estimated and therapy advised. The personnel involved would include a neurologist, orthopedic surgeon, pediatrician, neuro-surgeon and psychologist. Provisions should be made for hospital admission of such patients for study, as indicated.

2. *Out-Patient Supervision and Therapy.* — Provision for out-patient supervision and therapy is essential. Many children with cerebral palsy are best treated by leaving them in their home environment for at least the greater part of the time. This means competent medical and auxiliary supervision of the child, and provision for instructing and supervising the parents in the desired regimen. In general, an orthopedic surgeon of ability in this field would be best to supervise such clinics. Physical therapy, speech training, and other programs should be provided. Consultation with psychologists and neurologists should be available. Efforts should be made to provide, where possible, for special activities and training in public schools for these children.

3. *Hospitalization for "Acute Therapy."* — Ordinarily this hospitalization would be in the same place as that to which patients are admitted for diagnostic measures. Personnel of all types skilled in the field should be available, including a neuro-surgeon. This unit would provide hospitalization for study, surgery, active rehabilitation, and test analysis of the possibilities of therapeutic

training. Short periods of supervision and training would be provided in such a unit for those patients who are followed fundamentally the rest of the time as out-patients.

4. *Hospitalization for Chronic Therapy* — Hospitalization should be provided for those patients who require prolonged physical training, education and vocational training.

5. *Farm-Village Colony*. — Such a colony would be a place where those who are reasonably intelligent, but who are unable to compete in the outside world and have no other provision for protection, could live and be given jobs where they might retain their morale and spirit and be partially self-supporting.

6. *Custodial Care*. — There are many of these patients who have little or no mental capacity whatever, and the problem is insoluble, except by custodial care.

Obviously, plans of care could be very elaborate and expensive. A program in the Commonwealth should be developed gradually. Certain steps are recommended at this time, with the comment that the evidence is that up to a certain point federal funds matching those provided by the commonwealth should be available. The general program should be under the Services for Crippled Children, and the following specific recommendations are made:

Recommendations for Care of Cerebral Palsy.

1. Clinics of the Crippled Children's Service, which now provide service for these children to a certain extent, should have this activity elaborated. More physical therapists are needed in this program; and they should be concerned not only with the instruction of the child and the parents for home exercises, but it would be hoped that they might act in a supervisory and consolidating capacity in developing exercises and games for these children in the public schools to be conducted by instructors in physical education. Likewise, speech training should be expanded at the state level and elaborated, both for direct patient instruction and parent instruction; and it is suggested that such speech therapists at state level

should act as consultants in our public school system, and that speech training in our public schools be further developed. This means adding speech therapists to the Crippled Children's program at the state level.

2. Provision should be made for paying the fees which arise incident to patients attending appropriate charitable clinics of our voluntary hospitals when the patient is unable to meet such charges.

3. The cost of consultations should be provided when recommended by a clinic consultant.

4. The cost of hospitalization should be provided for the medically indigent for diagnostic study and "acute therapy." Existing teaching institutions should be used for this purpose. The Commission has been led to believe that certain of these institutions would be glad to participate in such a program if the cost incident to such a program were provided.

5. "Chronic hospital" facilities should be developed at Lakeville State Sanatorium. These should be used for patients for whom long hospitalization is necessary for rehabilitation. Only patients whose mental status is adequate for rehabilitation should be admitted. Patients should be referred after a diagnostic survey which leads to such a recommendation. Provisions should be made at the Lakeville State Sanatorium for medical supervisors and consultants skilled in such fields, and for appropriate training and education of the patients. This would include physical therapy, occupational therapy, speech therapy, general education and vocational training. Only patients should be admitted to Lakeville who are likely to be rehabilitated within a reasonable time, as may be determined by the staff. It would be extremely undesirable to have this institution used for custodial care of spastics.

6. Certain of these patients in whom the educational and vocational training is paramount should be admitted to the Massachusetts Hospital School as space is available. The rôle of the Canton Hospital School has already been discussed under "Hospitalization for Crippled Children." It is pointed out that cases should be admitted here for

education during the custodial care period. The spastic children can well be cared for in such a school. Canton should, in fact, be a school for such children, and not be developed into an "acute hospital" for the care of crippled children, since this function is already being carried out by many voluntary institutions as well as the Lakeville Sanatorium. It is, however, urgently needed for the custodial care of these cases and their vocational rehabilitation and educational training. Canton is admirably suited for this purpose, and should be developed in this direction to meet the needs of these patients.

7. The need for custodial care of patients with cerebral palsy should be investigated in detail, and it should be provided as necessary, beyond that period during which they can benefit from education and vocational training. As patients reach maturity they should be provided custodial care in institutions especially designed for this purpose. The placing of these cases in other institutions would be too expensive, and deprive more serious cases which could benefit from hospitalization of a chance for rehabilitation.

CHILDREN WITH IMPAIRED HEARING.

Massachusetts is one of the leading States in the detection of hearing impairment. Recently developed has been the "Massachusetts Hearing Tests," which is described as being the first practical method of screening masses of children by way of group pure-tone method. The State Department of Health undertakes the service in smaller communities by means of state-owned apparatus. It is our opinion that Massachusetts is rapidly developing a satisfactory system which will operate from the rural level to the large city level with equal success. The problem, however, is that of arranging proper therapy if the impairment in hearing is detected. Furthermore, in the pre-school age group, if our information is correct, no state program exists for the detections, treatment or early education of the deaf child. It would seem desirable to have a plan on a state level which would provide consultative

and diagnostic aid, and which would provide for the treatment that is indicated for the medically indigent. It would seem proper to provide hearing aids for such patients when necessary, and to provide through a home-study plan for the education of the parent of pre-school deaf children.

Lip reading is an extremely important element in dealing with children whose speech is impaired or whose hearing for speech will in all likelihood be impaired. It is our impression that there is a tremendous variation in the quantity and quality of instruction of lip reading from town to town, but that reading instruction does not give rise to the same difficulties as the sight-saving classes, since lip reading is commonly administered as a supplement to the child's regular educational program, and the children are not uprooted from their normal classroom environment.

In connection with the comment under lip reading, it should be considered that the same teacher who develops competence in speech training might, likewise, be the one who develops the techniques of teaching lip reading.

Specific Recommendations for the Hard of Hearing.

1. Regional "hearing conservation clinics," similar in distribution to the orthopedic clinics of the Services for Crippled Children, should be planned to give diagnostic aid, advice and treatment for children with impaired hearing. These clinics should be under the Services for Crippled Children. Children patients should ordinarily be referred by way of the family physician; but in the instance of the known medically indigent, reference might be made directly from the school to the clinic. Children of pre-school age as well as school children should be admitted to such a clinic. It is suggested that this program be developed in one area in an exploratory manner. The program should then be expanded as indicated.

2. Hospitalization should be provided for the medically indigent as necessary. This should be provided in existing

teaching units, and funds should be made available to support the cost of hospitalization.

3. Where necessary, as determined by financial incapacity of the patient, the Commonwealth should provide for the purchase in part or in full for the hearing aid for that child.

4. The Commonwealth should provide, through the Department of Education, a home study course which would enable the parents to begin the education of the deaf child at an early age. (Example: The home study course of the John Tracy Clinic at Los Angeles, California.)

5. See lip reading above.

SPEECH DEFECTS.

The Services for Crippled Children in the Commonwealth has had only one speech therapist to cover the whole State. It has been one of her duties, among others, to attend the crippled children's clinic, giving instruction at that time. At present, this position is unfilled and there is no speech therapist participating in the program. The Committee has not had time to investigate the speech training in our schools; the impression is obtained that it is not covered adequately.

Recommendations.

1. The amount of speech training and its efficiency in our schools should be investigated.

2. Additional speech therapists should be added to the Crippled Children's Services.

3. Speech therapy should be added to our public school programs as far as possible.

It is suggested that a teacher in each of our public schools should have a certain competence in speech instruction so that pupils with speech defects may have corrective exercises.

4. The Department of Education should develop and support the necessary facilities for the instruction of

teachers in speech therapy. The possibility for summer courses for this instruction should be considered.

5. The speech therapists at the state level, under the Crippled Children's Service, should be available for consultation with the teachers regarding the individual children who have such defects. It is suggested that it is ideal that a therapist of these services should see each child and make specific recommendations to the speech instructor in the school. This would mean that individuals of lesser competence could carry on the school program.

6. A committee should be appointed to study this whole problem in detail and make more detailed and specific recommendations.

VISUAL DEFECTS.

More than 65 per cent of the children in Massachusetts are now screened by means of a Massachusetts Vision Test which was developed in the Massachusetts Department of Public Health, and which, at present, is the only vision screen test classed as accepted by the American Medical Association, and which has been recommended by the Public Health Council as the best method of screening the vision of school children. Children in rural and small town areas at present receive better vision screening tests than do children in very large cities. This is due to the fact that state-owned equipment is loaned to the smaller towns but cannot be loaned to the larger cities. It would seem that the vision screening procedure in Massachusetts is doing one of the best, if not the best, jobs of screening in the country. The greatest need for improvement in this area is for extension of the Massachusetts vision test to our larger cities. This should be recommended and facilitated in every way possible. It is recommended that the present law which controls vision screening procedures is satisfactory.

It would seem that from one source or another the problem of obtaining glasses is solved. No recommendations are made regarding this.

This Committee has not had time to make any detailed

investigation, but recommended that the assignment of children to sight-saving classes should be investigated. In such sight-saving classes they are uprooted from their normal classroom activity and segregated in a "special" class. Specifically this sight-saving class contains children in widely varying ages who are unquestionably in need of sight-saving classes, but it is the impression gained by this Committee that investigation would disclose the fact that many children who have relatively slight visual impairment, but have other associated defects such as behavior problems, are arbitrarily assigned to sight-saving classes without proper consultative recommendations.

Specific Recommendations for the Visually Handicapped.

1. The extension of the Massachusetts vision test should be recommended and facilitated. The present law appears to be satisfactory.
2. The practices which are being followed in "sight-saving classes" in the different public schools should be investigated. It is recommended that transfer of a child to such classes be made only upon the joint recommendation of competent medical authority and a member of the school department after consultation with the parents.
3. Funds should be provided for the medically indigent which will allow the child to be examined and given the needed treatment in an adequately staffed and equipped clinic.
4. The cost of hospitalization should be provided for treatment of the medically indigent. Such hospitalization where possible should be in existing teaching units.
5. The Department of Health should circularize the medical profession, and, in particular, those conducting well-baby clinics, regarding certain conditions which are important to detect in the pre-school age.

MISCELLANEOUS RECOMMENDATIONS.

1. Provision should be made to underwrite the cost of care in the medically indigent of other crippling conditions

not previously specified. The principle should be that which has been outlined for other specific conditions, namely, funds should be provided to support the cost of out-patient visits to charitable clinics and for hospitalization in existing units of teaching charitable classification, the program to be administered by the Crippled Children's Services. Included in such a category would be such diverse conditions as congenital heart disease, bronchiectasis, diabetes, epilepsy and similar types of disabilities.

In the instance of diabetes, hospitalization should be understood to include the "diabetic camps" which are fitted for and have the purpose of treating the disease. Furthermore, medications should be provided for the medically indigent when necessary,—for example, insulin.

In epilepsy, attention is called to the needs as we noted under other conditions. Special clinics for epilepsy should be encouraged and assisted. Due to new developments, the efficient care of patients with this disease during childhood should improve the prognosis in these patients and decrease the social and economic morbidity. Furthermore, there is a need for an increase in the facilities for custodial care of patients with this disease by the Commonwealth, as well as an improvement in the standard of care.

2. It is recommended that for the present the technique which is now followed for the remuneration of doctors for their activities in caring for patients under Crippled Children's Services should be maintained. At present, this amounts to token payments, in that although an amount is paid to an orthopedic clinic consultant for holding a clinic, no fee is paid for operations that are performed on these children. As long as the medically indigent only are subject to the service, it is believed that the medical profession would be glad to participate in the program on the present basis, provided the demands on any one individual are not too large.

It is understood, however, that if the program cares for individuals other than the medically indigent, pay-

ment to physicians should be made on the basis of fees for services rendered. This would immediately increase the cost of the program tremendously.

3. It is further recommended that provision should be made for grants in aid when necessary to assist existing teaching units and hospitals in the care of these patients. Particular emphasis should be given to assisting teaching programs. Particularly should such state funds be available when federal funds may be obtained to match the moneys furnished by the State.

4. Finally, the Commission would like to commend the Services for Crippled Children on the conduct of its clinics for the orthopedic cripple, and for its underwriting the cost of hospitalization of the patients of these clinics. It is well to comment, however, that there is at present an inequality in the state aid, in that patients from the metropolitan areas are not eligible. It is our recommendation that such aid should be given when necessary, and that greater flexibility should be developed in underwriting the expense of hospitalization in the medically indigent and of giving "partial aid" when necessary.

5. In addition to funds required for hospitalization of cases at such teaching institutions as the Massachusetts General Hospital, Children's Hospital and Good Samaritan and other voluntary hospitals, funds will be required to make adequate provision for crippled children and rheumatic fever patients at Lakeville and North Reading. These institutions can be most economically operated if they have sufficient personnel to keep them operating as near a full capacity as possible. As the program develops, and facilities of voluntary hospitals and of these two institutions are completely utilized, it may be necessary to add new facilities. Such plans should be developed in time to provide additional facilities when it becomes obvious that these are needed. At the present time there is no indication that, beyond necessary funds to operate these institutions at full capacity, there is need for new or additional beds. The Canton School

for Crippled Children should be developed with the necessary financial support from the State as a custodial and educational institution for crippled children, particularly those who require education through high school level, which is now not available at this institution. Similarly, it is recommended that the additional funds for the operation of the crippled children and rheumatic fever clinics be obtained as soon as possible, together with the necessary appropriation for matching any increase in federal grants that may be made available, so that diagnostic clinics would be provided wherever necessary, and these patients hospitalized in existing facilities of voluntary hospitals or the state institutions.

Dental Health.

The establishment of the Division of Dental Health in the Department of Public Health has been the greatest single achievement towards improving the oral health in this Commonwealth since the 1936 Report. Currently, under the guidance of a dentist, trained in the disciplines of public health practice, there is much more intelligent investigation of problems in oral health accompanied by a more intensive service to the public and the dental profession than has heretofore been enjoyed. Substantial expansion of these activities is imperative.

For the first time in the history of oral hygiene there is in the chemical impregnation of teeth the promise of a new method, useful in the actual prevention of initial carious lesions of the teeth. The most widely known and generally used of these chemicals are the fluorine salts which when bound by varying methods to human teeth have been reliably reported to reduce the expected incidence of dental decay by 40 per cent. The multiplicity of the still unanswered problems in the use of these chemicals, and the magnitude of public health application of this knowledge is far too great to depend on agencies other than the State to implement the required investigative research. The Dental Division of

the Department of Public Health must be more adequately financed.

INCIDENCE OF DENTAL DISEASE.

In numerous reliable reports, it has been stated that more than 95 per cent of the school population of the Commonwealth suffer some form of dental disease ranging from a few teeth decayed to multiple loss of teeth. Many children can be classified as dental cripples with almost irreparable damage developing before adolescence. Although there are no statistically reliable figures, it is judged that less than 25 per cent of the public of adolescent age, or under, are receiving adequate treatment for dental diseases. Worse is the fact that only a small fraction of our population is receiving any prophylactic or preventive dental care.

One only needs to reflect on the above statements to realize the dental need of young adults and the middle aged. Dental problems in this age group are increasing in direct ratio to the increase in our aging population. Although the greater emphasis should be placed on prevention of oral disease in youth, one cannot, in the broad definition of public health, disregard the many distressing oral problems of the older age groups. Some of our investigative studies should be turned towards mass alleviation of the discomfort of these older groups.

NEEDED SERVICES.

Local community dental health services should be encouraged, but there is little doubt as to their present inadequacy.

Definite effort should be made to establish service clinics as investigation and demonstration centers in the chemical treatment of young teeth, and to expand these activities as rapidly as results justify.

Pilot studies in service clinics for the surgical and prosthetic care of the aged, particularly with a view towards lowering costs, should be started.

Present services for the care of young dental cripples are woefully inadequate. The cleft-palate child is especially neglected once initial surgery to the lip and palate has been completed. This situation is in urgent need of correction.

A laboratory privilege under the supervision of the Division of Dental Health should be established for the use of the dental profession in specific bacteriological analyses and pathological reports. These services could be patterned after those now existing for other branches of medicine.

EDUCATION.

Public Education. — The advances made in co-operation between educational and health agencies in furthering all forms of public health in the last ten years are gratifying. Continued co-operation of the groups should be encouraged by the state departments. Public health education concerning dental diseases is tending towards the creation of an increasing demand for professional services greater than can be satisfied. This does not indicate that there should be less activity in public education.

Professional Education. — The Commonwealth is fortunate in having two excellent dental schools as well as several graduate institutions interested in dental education and research. None of these institutions enjoys the financial freedom it should, and it is earnestly recommended that the federal government, through the state, seriously consider subsidy, particularly for investigative research.

There is no doubt that, to quote from the 1936 Report, "Dentistry as a specialty of medicine" is now a fact, and that with the rapid advancement of medical knowledge today the curricula of our schools is crowded to capacity. Expansion of graduate and postgraduate education should be encouraged.

Education of Auxiliary Aides.. — Present methods of training dental hygienists and dental assistants are

mostly poor, and facilities for their training are hopelessly inadequate. This situation is not the fault of the institutions engaged in their training. Specific revision of the laws governing the training and practice of auxiliary personnel is urgently required.

Evidence is clear that auxiliary dental personnel should be regulated to several levels. There is no doubt that many of the time-consuming simple operations now burdening the practicing dentist could be safely executed under his supervision by adequately trained auxiliary personnel. If such help could be trained and supervised, a great reduction in the present shortage of dental services could be made. Most students of this subject are convinced that an appreciable economic saving could also be passed on to the public. It would be foolish to increase the training of dental hygienists by expanding the teaching in techniques beyond simple teeth cleansing if the law failed to permit their practice. The dental assistant today has no regulation by statute as to either training or practice. There is much need for this regulation on the basis of public hygiene. At still another level of auxiliary aides, legalized training and practice would be justified if the present recent trend towards prophylactic, topical, and chemical treatment of teeth continues to be as promising as it now is. In consultation with the department of Public Health and the Department of Education, as well as with representatives of the organized dental profession, it is agreed that the legislative body should cause an exhaustive study to be made of the public need for auxiliary dental aides.

RECOMMENDATIONS.

1. That substantial expansion and adequate financing of the Division of Dental Health in the Department of Public Health be expedited.
2. That intensive research in the chemical prophylaxis of dental caries be supported by the State.
3. That study be devoted to service programs in dental care for the old and middle aged.

4. That corrective services for young dental cripples be increased.
5. That laboratory privileges be extended by the State to the practicing dentist.
6. That graduate and postgraduate education be expanded.
7. That a study be made on ways and means of legalizing expanded dental services by auxiliary personnel.

Public Health Nursing.

"Public health nursing is an organized community resource for furthering public health measures designed to prevent and reduce sickness and to produce positive health. These measures include environmental planning for health and safety; opportunities for gaining knowledge and attitudes favorable to maintenance of health; facilities for diagnosis and for preventive and restorative treatment. The contribution of the public health nurse is essentially educational, whether her service is given in the form of nursing care of the sick or health guidance and instruction to the sick and well; whether she works in the home, health center, clinic, school, or industrial plant; whether she is employed by a governmental or voluntary, health or non-health agency. Her services are available to all age groups in all economic and social circumstances — to those who can afford to pay full or partial fees as well as those who cannot." Such is the definition of public health nursing as given by the National Organization for Public Health Nursing.

Public health nursing is an important factor in the success of most public health programs. Every health agency which aims to render service directly to individuals should, therefore, provide for an adequate, well-trained staff of public health nurses under qualified supervision, working in close relation to the community program. This goal is often difficult of attainment because of lack of appreciation of the value of the service, and unwillingness to provide adequate financial support. At the

present time the accepted standard of *1 nurse for every 2,500 people* has not been met in Massachusetts.

Every municipality in Massachusetts has some public health nursing service administered either by an official or non-official agency or a combination of both. There are approximately 1,379 public health nurses (exclusive of industrial nurses) in Massachusetts, of whom about 276 are in Boston. With an estimated population of 4,493,281 for 1945, this gives a ratio of 1 nurse to each 3,400 people. Boston, with an estimated population of 766,386, has 1 public health nurse for approximately each 2,700 persons, and in the rest of the Commonwealth, if public health nurses were equally distributed, there would be 1 to each 3,288.

While these ratios would seem to indicate a more favorable situation than is found in some other States, the crude figures do not represent the whole picture of public health nursing facilities. Table 21 shows the distribution of nurses in the State according to the agency by which they are employed.

TABLE 21. — *Agencies employing Public Health Nurses.*

OFFICIAL AGENCIES.	Total Number of Nurses.	NON-OFFICIAL AGENCIES.	Total Number of Nurses.
State Department of Health . . .	31	Visiting nurse associations . .	612
Boards of health . . .	391		
School committees . . .	306		
Other official agencies . . .	36		
	764		

One of the fundamental weaknesses of public health nursing in Massachusetts is the inequalities in the distribution of service. Some of the smaller communities in need of a nursing program have only a part-time school nurse, who does little or no home visiting for that age group, and gives no supervision on care to other members of the community, while in other municipalities

there may be three or more organizations employing nurses whose service cannot help overlapping.

These wide differences in facilities are due to the fact that most communities and agencies insist on independent employment of nurses rather than "pooling" their resources for joint employment of competent personnel and adequate supervision. In a very few instances, however, there has been such joint employment with resultant increase in efficiency.

It is also apparent from Table 21 that the crude ratios given do not indicate the true facilities, owing to the fact that many of these nurses are employed on part-time basis. In some instances this means but one day of service per month in the school — often rendered by a local person not desirous of employment, but as an accommodation to the community.

Another fundamental weakness of the nursing program is the limitation of service rendered by many of the nurses. Many of them are employed on specialized programs. Too often the school nursing, the board of health nursing, and visiting nursing services in the same community are given by different individuals in different agencies, usually without any attempt to correlate their activities. In some cases the one individual may be overworked, while the other has too few duties to warrant full-time employment. Unfortunately, in a few instances there has been actual conflict between the programs of the various agencies offering community nursing services. The principle of generalized public health nursing as a means of increasing the efficiency of the program, and at the same time reducing needless expense through duplication of effort, is strongly endorsed.

TRAINING OF PUBLIC HEALTH NURSES.

Table 22 contains essential facts concerning the training of nurses doing public health work in Massachusetts. It is apparent from these data that the professional background of the nurses engaged by non-official agencies is slightly, though significantly, better than that of those

officially employed. The significant difference is found with respect to those who have had no public health nursing training. Of the total number of nurses employed by the official agencies, 56 per cent have had no public health nursing training, while only 34 per cent of those employed by the non-official agencies are in that category. the non-official agencies also have in their employ more nurses with special academic course (one year or more) in public health nursing.

TABLE 22. — *Training of Public Health Nurses.*

	Official.	Non-Official.	Total.
Nurses employed	767	612	1,379
Number with public health training.	413	261	674
Less than one year training . .	261	241	502
One year or more training . .	93	110	203

TYPES OF SERVICE RENDERED.

The scope and nature of a public health nursing program in a community will be determined in each instance by the special needs and conditions that exist. As a professionally trained person, the public health nurse is indispensable to a modern health program as a co-ordinator, an educator, and as one rendering personal services. Generalized nursing is strongly recommended in preference to a specialized service rendered by an individual nurse in a given area. The nursing program, however, may logically be broken up into a variety of services, all of which have the same general objective, or aim, but which deal with different groups of the population, or with different aspects of health and disease. The nurse is essentially a health educator and co-ordinator, working chiefly in a personal relation with individuals, or with the family. In any circumstance, public health nursing services should include the following: —

1. *The Care of the Sick in the Home.* — This may include actual bedside nursing and demonstration of nursing

methods, carried out under medical direction. The aims are to secure proper medical care, to provide nursing, or to supervise nursing for patients in the home, and especially to give instruction in the home, not only in proper nursing technique, but also in hygiene and the prevention of disease.

2. *Communicable Disease Services.* — The public health nurse may aid in securing complete reporting, and in obtaining medical and nursing supervision of cases of all communicable disease. She frequently serves as board of health agent in establishing proper isolation and quarantine, and teaching the importance of conforming with local regulations to prevent the spread of disease. The public health nurse also educates the family in the importance of immunization practices, and may assist at various health clinics.

Services to patients with tuberculosis, syphilis and gonorrhea are often dealt with separately. The public health nurse may assist in case-finding, and in obtaining histories and examinations of all contacts with these diseases. She educates the patient, as well as others with whom she comes in contact, in matters relating to the prevention and treatment of these diseases. Social as well as strictly health matters may come within her field.

3. *Maternity, Infant and Child Health Services.* — Under proper medical supervision the public health nurse should give care and advice to the expectant mother during the term of pregnancy. An invaluable opportunity presents itself here to instruct the mother not only about her own health, but about infant hygiene, in anticipation of the arrival of the baby. The nurse also may instruct the mother in the technique of infant care, and may assist to keep the infant under proper medical supervision. The health services to pre-school age and school age children also depend upon public health nursing services. The supervision of pre-school children, the teaching of hygiene, communicable disease control, immunization, the correction of defects, and nutritional service all receive the attention of the nurse. School

health services are recognized in Massachusetts by the requirement that every town or superintendency district shall employ school nurses. Under medical supervision the nurse supplies the same general services to this group as to those outlined above.

4. *Assistance in Special Programs.* — The public health nurse may render services in connection with mental hygiene, orthopedic conditions, industrial hygiene, cancer and other chronic diseases, and other phases of adult hygiene by the encouragement of periodic health examinations. Special services to get proper care for orthopedic defects through medical or institutional care, and physical rehabilitation of those maimed by disease or accidents, are within the province of the nurse. In industry, service to employees by securing, or assisting at medical examination, promotion of proper sanitation of the plant, health teaching, the prevention of accidents, and the nursing follow-up of employees who are under medical care, gives a large opportunity.

Exclusive of service rendered in relation to the care of the sick, it will be noted that there is a great variation in the types of services rendered, — variation by employing agencies and municipalities. The visiting nurse associations carry a more diversified program than do most of the official agencies. This is not surprising, since the school nurses are theoretically limited to activities connected with the public school system, and in those communities where visiting nursing associations exist, boards of health do not furnish home care of the sick.

SUGGESTED IMPROVEMENTS.

It is apparent from the foregoing discussion that the essential weaknesses of the public health nursing programs in Massachusetts are due to lack of co-ordination in the work of the several participating agencies, and lack of proper training of many of the nurses. Correction of the former is fundamental to improvement, but depends in large part upon the ability of the smaller communities to pool their resources for the employment of qualified

full-time nursing personnel. It has already been pointed out that it is desirable to have a plan whereby complete public health service may be made available in these towns on a district basis. Were such a plan adopted the nursing service would inevitably be improved and the present duplication of effort in these areas be largely avoided. In the larger communities a generalized program, including school nursing, can be brought about, if the agencies employing nurses will participate in joint planning and will endeavor to understand and appreciate a well-co-ordinated public health nursing program.

Higher professional standards for those engaged in public health work are essential to progress. The Commission has already pointed out some of the obstacles that prevent the attainment of higher standards so far as concerns those employed under civil service. As a large number of the public health nurses are employed outside of these laws, improvement will come only when some central agency is empowered to establish minimum standards as to the qualifications of public health nurses. It seems illogical that there should be certain standards as to the education and training of those who are to trim hair, or give cosmetic treatments, but no standards for those engaged in promoting the health of the individual and the community. Therefore the Commission recommends that the Department of Public Health be empowered to establish minimum standards of education and training which must be met by all public nurses hereafter appointed by official agencies.

Notwithstanding the acute shortage of nurses, there were nearly five times as many graduate and student nurses in 1940 as in 1910, and there were more in 1948 than there were in 1940. However, the demand, due to expansion of hospital and health services, far exceeds the present supply.

Recruitment continues on a broad scale. The American Hospital Association, the American Medical Association, and various state and local bodies of hospital administrators and physicians have tried to help. So have many

representatives of the public. In spite of all attempts there is little hope that an adequate supply of graduate nurses can be obtained, if the demand remains at the present high line.

Many thoughtful persons are beginning to wonder why young women in any large number would want to enter nursing as practiced, or schools of nursing as operated, today.¹

Job dissatisfaction, lack of desirable personnel policies, inadequate remuneration, a widespread feeling of insecurity due to lack of retirement and unemployment provisions, in addition to the lack of prestige, are some of the problems which militate against entrance into nursing.

Dr. Brown indicated that —

there will be three large groupings of nurses in the near future. These are the practical nurse, the registered graduate nurse of today, and the truly professional nurse who is a graduate from a degree program which prepares her for any beginning position in nursing services (including public health nursing). As more graduate nurses secure preparation which will qualify them as professional, it is possible that ultimately there will be two large groupings, the practical nurse and the professional nurse.²

If professional and other nursing education is to be centered in educational institutions, it is imperative that the training of practical nurses, or nursing attendants, be given immediate consideration.

We believe that in-service training for practical nurses should be at least as carefully devised and the quality of instruction as adequate as is training now given to student nurses in the typical hospital school. We believe, furthermore, that in-service training, rather than the operation of a school for the preparation of graduate nurses, should progressively come to be the essential task of the majority of hospitals.

Because of the many problems involved in affecting the necessary changes toward meeting these goals, it is recommended that a Committee appointed by the Massa-

¹ Brown Report, p. 71, "Nursing for the Future." Esther Lucile Brown, Ph.D., 1948, Russell Sage Foundation.

² "Nursing for the Future," Esther Lucile Brown, Ph.D., 1948, Russell Sage Foundation.

chusetts Nurses Association and composed of nursing leaders, hospital administrators, physicians, those organizations and agencies which are interested in the training and employment of nurses, and interested citizens be appointed to consider ways by which the recommendations in this Report may be carried out for the education of professional nurses and the training of practical nurses or nursing attendants.

It is obvious that the supply of public health nurses will depend on the numbers graduated from professional schools in the future.

RECOMMENDATIONS.

1. That local public health nursing be carried on under a generalized rather than specialized program wherever practicable.
2. That the Department of Public Health be empowered to establish minimum qualifications for all public health nurses employed by official agencies.
3. That the public health nursing program in rural areas be established on the basis of units sufficiently large to permit of the employment of full-time trained public health nurses working under proper nursing supervision on a generalized plan.
4. That a committee be appointed to study problems in relation to the shortage of public health nurses, and ways through which the supply may be enlarged to meet the increased demands due to the expansion of public health programs.

Nutrition Services.

Recent advances in our knowledge of nutrition indicate that nutrition services as related to maternal and child health would result in improved maternal and child health, and, in terms of a long-range public health program, would bring about considerable improvement in the general health of the population of the State. Attention should be directed first to our inability to put such

services into full operation, due to the following existing conditions, and a plea should be made for their immediate correction.

Lack of education in nutrition, both theoretical and practical for —

- (a) Medical personnel, dentists, nurses, social workers and others. At present the majority of the personnel employed in these fields has not sufficient background to appreciate the value and use of the science of nutrition and the services thus made possible.
- (b) Nutritionists and dietitians with adequate training are not available in sufficient numbers to staff such services even if they are offered to a desirable minimum.
- (c) The successful operation of maternal and child health services depends upon the consideration of the whole individual in the broadest sense. This means that the personnel co-operating in such services must be able to appreciate the possible implications of each field. Nutrition is one important factor which deserves proper consideration.

It is therefore important at this time to call attention briefly to the various nutrition services which, in the interests of the health of the mothers and children of this State, should be available, and then to indicate the first points of attack to improve existing services as rapidly as conditions permit.

I. MATERNAL NUTRITION SERVICES.

The present evidence from recent prenatal studies indicates that an intensive program to improve the nutrition of the pregnant woman might result in:—

- 1. For the mother —
 - (a) Improved health during pregnancy.
 - (b) Fewer complications during pregnancy, including less toxemia.
 - (c) A safer delivery.
 - (d) Lowered maternal mortality.
 - (e) Better health following delivery.
 - (f) A greater likelihood that she can nurse her infant and that the milk which she secretes will be of good quality.
- 2. For the newborn infant —
 - (a) Decreased mortality.
 - (1) Decreased incidence of stillbirths.
 - (2) Decreased incidence of neonatal deaths.

- (b) Better growth and development and decreased morbidity.
 - (1) Less likelihood of prematurity.
 - (2) Better physical condition at birth and during infancy.
 - (3) A lessened incidence of congenital malformations.

It appears, therefore, that sufficient evidence exists already to justify the statement that any program of maternal and child health should include in its prenatal aspects nutritional care for the pregnant woman. This nutritional care should afford —

1. Improvement of the dietary habits of all women of child-bearing age in order that women enter pregnancy in a good nutritional state.
2. Effective and practical nutritional advice and care from as early in pregnancy as possible.
3. Continued nutritional supervision throughout the period of lactation.
4. Corrective dietary advice as a part of postpartum care when it is needed.

Such goals for improving maternal nutrition would necessitate the following changes in our educational and public health programs:

1. General health education programs throughout the State would have to include the study of normal nutrition and the special nutritional requirements of pregnancy and lactation.
2. Facilities for dietary supervision would have to be provided in connection with all prenatal care services.
3. Our public health programs in relation to prenatal care and postnatal care would have to be integrated with other community services so as to insure an adequate diet for every woman during pregnancy and lactation. This, of course, implies that she is an integral member of a family for whom an adequate diet is a health essential.

Recommendations for Maternal Nutrition Services.

That the State Department of Public Health promote an intensive program to improve the nutrition of pregnant women in the following ways:

- (a) Better education in nutrition, both theoretical and

practical, as it relates to pregnancy should be provided for all personnel involved in prenatal care services. Funds for necessary training in nutrition should be made available in order to increase the number of properly trained personnel.

(b) General education programs should be sponsored to improve the dietary habits of women of child-bearing age in order that women enter pregnancy in good nutritional state.

(c) Consultation nutrition service for staffs of prenatal clinics in the State should be provided.

(d) Obstetricians and private doctors engaged in the care of pregnant women, hospitals, and all voluntary agencies offering prenatal care services, should be urged to provide effective and practical nutritional advice from as early in pregnancy as possible. The State Department of Public Health should have suitably trained nutritionists to co-operate when requested in the establishment of such consultation services.

II. NUTRITION SERVICES FOR INFANTS AND CHILDREN.

Nutrition is one of the most important of the complex and interrelated factors which exerts a profound influence upon the growth and development of the child between birth and maturity. It should, therefore, receive consideration in all services dealing with infant and child health.

A. Nutrition Services in Infancy.

1. A physician, who has had special training in pediatrics and infant feeding either privately employed, or in a child health clinic, should direct the feeding program during infancy.

(a) Present knowledge of the composition of breast milk has increased sufficiently, together with other benefits which breast feeding gives, to justify the physician in urging every mother who is well nourished, and can possibly do so, to breast feed her infant.

(1) The diet of the mother during the lactation period needs careful supervision.

(b) If for any reason an infant cannot be breast fed, the feeding mixture recommended should be carefully adjusted by a competent physician.

- (c) During the first year of life additional foods to meet the infant's nutritional requirements should be introduced into the diet as the physician directs.
 - (1) During the latter part of the first year, when an infant learns to take a variety of foods, many mothers would benefit by more detailed instruction in handling their child's feeding than the busy doctor can give. The services of a nutritionist, or nurse properly qualified in nutrition and working with the doctor, are invaluable.

B. Nutrition Services in the Pre-school Period.

- 1. This period in the life of a child is an extremely important period from the standpoint of habit formation, and deserves greater attention than is usually given it today.
- 2. In connection with regular visits to either a private physician or a preschool child clinic the child's diet and eating habits should be carefully supervised to provide the best possible food for health and growth.
 - (a) Consultant services of a nutritionist should be available when needed.

C. Nutrition Services in School Health Programs (Elementary and Secondary Schools).

- 1. All pre-school children, who at the time of their physical examination for school are found to be, for one reason or another, in need of nutritional guidance, should receive the benefits of consultant nutrition services.
- 2. Evaluation of a child's nutritional status should be made at each subsequent physical examination at both the elementary and the secondary school levels, and nutritional guidance given by competent personnel when needed.
- 3. Nutrition education should be incorporated into the school curriculum at each grade level through both elementary and secondary schools and in teacher-training institutions.
- 4. The school lunch program should carry out in a practical form the nutrition education in the classroom. It should also provide approximately one third of the day's nutritional requirements. Parents should be advised through educational channels how this lunch supplements the other meals to fulfill the child's nutritional needs.
- 5. Attention should be called to the extremely high nutritional requirement of adolescence and the careful planning necessary to meet these needs, especially at the peak of the adolescent growth spurt.

Recommendations for Nutrition Services for Infants and Children.

That the State Department of Public Health promote an intensive program to improve the nutrition of infants and children at all age levels in the following ways:

(a) Better education in nutrition as it may relate to infant and child health should be provided for all personnel participating in these services, especially physicians, nurses and nutritionists. Funds for necessary training should be made available in order to increase rapidly the number of properly trained personnel.

(b) General education programs should be provided to improve the nutrition of the family.

(c) Consultant nutrition services should be provided in child health and preschool clinics. The State Health Department should encourage the provision of adequate nutrition advice by pediatricians and other physicians, and by all hospitals and voluntary agencies caring for children of these ages.

(d) The State Health Department should provide consultant nutrition services as a part of the school health program, including help on nutrition education and school lunches where such services are not available as an integral part of the local school program.

GENERAL RECOMMENDATIONS.

In view of the present trends in public health the following general recommendations are made:

1. The State Department of Public Health, in co-operation with the Departments of Civil Service and Personnel, should raise the standards and compensation for public health nutritionists at both state and local levels. This will be necessary to provide more highly qualified nutrition staffs to meet the increased responsibilities of an expanded nutrition program.

2. The State Department of Public Health in its program for the promotion of local health services should recommend nutrition consultation services in each of the

local areas as soon as the basic health services are well established.

3. The State Department of Public Health should add a well qualified medical nutritionist to its staff. The Department should participate in surveys and studies to discover prevailing food habits and nutritional needs, especially among the vulnerable groups: viz., women of child-bearing age, infants and children, the aged, the ill and the convalescent. This should be done in co-operation with other agencies, professional groups and schools or universities, with a view to working out —

(a) More satisfactory means of evaluating nutritional needs and services at state and local levels.

(b) A more realistic basis for planning local nutrition services.

(c) More effective preparation and use of teaching materials closely related to the needs of specific groups.

4. Many hospitals in Massachusetts, as well as many institutions caring for children and most nursing homes, do not employ a trained dietitian. The State Department of Public Health should offer the consultation services of a qualified dietitian to those groups which cannot afford it.

5. The State Department of Public Health should work out some type of clearing-house or council whereby all groups — public health, social welfare, education, agriculture, production and distribution — can be kept informed of present efforts, future needs, and plans for work which may affect the nutrition of individuals or groups in the State.

Public Health Social Work.

The importance of the social aspects of public health, and the interrelatedness of social and health needs, are well recognized in modern public health practice. The success of a health program depends upon the understanding and ability of individuals to avail themselves of the health services which the community provides, and

it is the social problems frequently which are the underlying cause of lack of co-operation on the part of individuals.

The significant contribution of social factors to the prevention or development of illness, and to the promotion of optimum health, does not need elaboration. Massachusetts has to her credit another "first" in that she was the first State to take action in support of this accepted philosophy of public health, — that health and social welfare cannot be separated, — when in 1921 the Department of Public Health appointed the first medical social workers in a public health program. The early workers were employed in venereal disease; later, cancer and tuberculosis were added. As the program of the Department has expanded to include other diagnostic groups which, like venereal disease, cancer and tuberculosis, involve treatment of individuals who have important social problems related to the disease of handicap, more medical (public health) social workers were added to handle these social problems which had to be treated if the programs were to be effective. The transfer (1946) of the annual census for Physically Handicapped Children from the Department of Public Welfare to the Department of Public Health brought in another group of future citizens presenting serious social problems; also, the transfer in 1948 of the licensing of convalescent homes and boarding homes for the aged has added to the Department a service in which the social aspects are of importance. Today the medical social workers of the Department constitute an essential part of the service in maternal and child health, crippled children's services, rheumatic fever, tuberculosis, cancer and venereal diseases.

Social services will be important in certain other Department programs as they develop as in heart disease, chronic disease and other preventive and medical care programs, and the need for expansion of the social service staff is clearly foreseen. Already the social services provided at the state institutions are not sufficient for their

needs. The extension of Lakeville State Sanatorium to include children with orthopedic conditions and cerebral palsy, — conditions whose social aspects are extremely important, — and the opening of North Reading State Sanatorium to children with rheumatic fever, where also the treatment of social factors is essential, are examples of medical programs which require increased medical social staff.

The development of a generalized medical social service in the district health offices rather than continuation of specialized service to diagnostic groups such as tuberculosis and venereal disease, is sound. Unfortunately, due to budget limitations, only seven of the eight district health offices are so far covered. The social services in district health offices, moreover, appear to be somewhat one-sided in that in all districts which operate crippled children's clinics, — in other words, in all except the North Metropolitan District, — 60 per cent to 65 per cent of the social workers' service is to crippled children. The reason seems to be that these children frequently remain under the direct medical supervision of the Department for many years until the age limit of twenty-one years is reached, and the Department's excellent service includes consideration of the whole child and his social as well as medical needs. Many social problems naturally arise in relation to the long periods of hospitalization with separation from family, long convalescence, adjustment to handicap, and planning for vocational rehabilitation, and the Department assumes responsibility for seeing that these problems are met. Nevertheless, more social services are needed and desired in relation to other district programs, such as tuberculosis, venereal disease, cancer and chronic diseases, maternal and child health, licensing of nursing homes, and others. The heavy case loads in Crippled Children's Services do not permit the workers to adequately cover these requests for service.

Perhaps even more serious than lack of sufficient field staff is the fact that the chief of the Bureau of Social Work has no assistant in the central office. Not only is

she responsible for the technical supervision of the field and institutional social work staff; she is also responsible for policy forming, and program planning for the overall social service program of the Department, in co-operation with the Commissioner and Division Directors, and for interpretation and co-operative relationships with state and community social agencies. Obviously, this is too large an assignment for one individual.

Outside of the larger metropolitan areas very little service is available locally in the field of family and child welfare. Service to children in their own home is usually not available, except for that the local nurse can provide. Problems of convalescent or foster home placement for children, especially the physically and mentally retarded child, and problems of adults needing institutional care, are frequently brought to the attention of the Department. It might be said that many of these problems are not appropriately the responsibility of the Health Department. In the broader sense, however, public health is concerned with the health and well-being of all its citizens. The Department has recognized the limitations in the services which other official and voluntary agencies are able to provide. Therefore the Department has accepted such referrals, which often come from legislators, other public officials, and citizens, and the social work staff has provided whatever service it could, evaluating the medical and social situation and bringing together the person in need with whatever local or state community facility could be utilized.

Needs and Recommendations. — It is seen from the foregoing that adequate consideration of the social aspects of the public health service in the Commonwealth requires expansion of the social services both within the Department and in the local communities. In the Health Department the staff of the Bureau of Social Work needs expansion and strengthening, as follows:

1. Minimum staff needs include —

(a) An assistant supervisor in the central office.

(b) An additional social work supervisor at the state

level for the new programs of heart disease and chronic diseases.

(c) An additional district supervisor so that the eight health districts will be covered.

(d) Restoration of the four district social worker positions which are vacant because of lack of funds — important because of social needs in developing programs of rheumatic fever, heart disease, chronic disease, licensing of nursing homes, and other services.

2. The quality of service needs strengthening. This requires a fuller recognition on the part of the Civil Service Commission of the specialized professional preparation needed for the practice of public health social work. Present conditions still make possible the appointment of professionally unqualified personnel. This is a waste of the investment of the taxpayers' money. A classification for public health social workers should be set up with qualifications which conform to the membership requirements of the professional social work organizations.

Attention is called to the Report of the Special Commission to Study and Investigate Public Health Laws and Policies, December, 1936 (House, No. 1200). The following statement appears on page 47 of this Report, in a section entitled "Obstacles to Maintenance of Professional Standards": —

Although the Commission endorses most highly the fundamental principles of civil service, it believes that certain of the laws and rules operate in such a manner as to block any progress toward the realization of proper professional standards. Notable among these defects are the requirement of local residence as a condition of eligibility for examination, the lack of any educational requirements, and preference accorded to veterans. None of these are matters which could conceivably be defended as measures of professional competence, and yet their operation is such that well-trained and experienced individuals are frequently blocked from consideration while preference is accorded to less able persons. To what extent similar difficulties exist in other fields of government has not been considered by the Commission. It is evident, however, that the present operation of the civil service laws offers, along with their advantages, certain serious obstacles to the attainment of desirable professional standards in health work. It is therefore recommended that, as they apply to professional

positions in health departments (physicians, nurses, health officers and agents, bacteriologists, nutritionists, engineers, chemists, etc.), the civil service laws be amended to provide for —

1. Removal of requirements of local residence.
2. Restoration of educational standards.
3. Abolition of veterans' preference.

This recommendation is repeated, but should be amended to include in the list of professional personnel, social workers in public health.

3. Higher salary ranges for all classifications in public health social work should be provided. They should be commensurate with the training and experience required for a high quality of service, and should be comparable to similar positions in medical social agencies of good standards. Without well-qualified social workers in adequate numbers, the services and objectives of the health department may only be partially realized.

A P P E N D I X 1.**PROPOSED LEGISLATION.****The Commonwealth of Massachusetts**

In the Year One Thousand Nine Hundred and Forty-Nine.

**AN ACT FURTHER QUALIFYING THE TRAINING, EXPERIENCE
AND APPOINTMENT OF THE COMMISSIONER OF PUBLIC
HEALTH.**

*Be it enacted by the Senate and House of Representatives
in General Court assembled, and by the authority of the
same, as follows:*

1 Section 2 of chapter 17 of the General Laws, as
2 most recently amended by section 1 of chapter 658
3 of the acts of 1947, is hereby further amended by
4 striking out, in lines 1 to 3, inclusive, the words
5 “physician skilled in sanitary science and experienced
6 in public health administration” and inserting in
7 place thereof the words:— graduate of an approved
8 medical school and an accredited school of public
9 health with three years experience in a full time
10 position in public health administration, or, in lieu of
11 graduation from a school of public health, he shall
12 have had at least five years experience in a full time
13 approved position in public health,— and by insert-
14 ing after the word “Council”, in line 5, the words:—

15 from a list of not less than three qualified persons
16 recommended by the public health council,— so as
17 to read as follows:— *Section 2.* The commissioner
18 shall be a graduate of an approved medical school and
19 an accredited school of public health with three years
20 experience in a full time position in public health
21 administration, or, in lieu of graduation from a school
22 of public health, he shall have had at least five years
23 experience in a full time approved position in public
24 health. Upon the expiration of the term of office of a
25 commissioner, his successor, shall be appointed by the
26 governor, with the advice and consent of the council
27 from a list of not less than three qualified persons
28 recommended by the public health council for five
29 years. The commissioner shall receive a salary of ten
30 thousand dollars. He shall be the executive and ad-
31 ministrative head of the department.

APPENDIX 2.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT PROVIDING FOR THE CONSTRUCTION BY THE DEPARTMENT OF PUBLIC HEALTH IN THE CITY OF BOSTON OF A HOSPITAL FOR THE CARE OF PERSONS SUFFERING FROM CHRONIC DISEASES AND THE PURCHASE OF LAND THEREFOR.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 SECTION 1. The department of public health is
2 hereby authorized and directed, with the approval of
3 the governor and council, to purchase land in the city
4 of Boston for a hospital of about eight hundred beds,
5 for the care of persons suffering from chronic diseases,
6 including a nurses' home, out-patient department and
7 other necessary facilities, and to construct thereon
8 such a hospital and related facilities. For the purposes
9 of this act, said department may expend for the pur-
10 pose of the site and for the preparation of plans the
11 sum of four hundred thousand dollars, in addition to
12 any amount heretofore appropriated.

1 SECTION 2. Chapter five hundred and eleven of
2 the acts of nineteen hundred and forty-six is hereby
3 repealed.

APPENDIX 3.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

**AN ACT RELATIVE TO THE TREATMENT OF TUBERCULOSIS
PATIENTS.**

*Be it enacted by the Senate and House of Representatives
in General Court assembled, and by the authority of the
same, as follows:*

1 SECTION 1. Chapter 111 of the General Laws is
2 hereby amended by inserting after section 91 the fol-
3 ing fourteen sections, under the caption STATE AID
4 FOR THE TREATMENT OF TUBERCULOSIS PATIENTS:—

5 *Section 91A.* Whenever any county or city shall
6 expend moneys for the operation and maintenance
7 of a hospital operated exclusively for the care and
8 treatment of tuberculosis patients, or whenever any
9 county or city shall expend moneys for the operation
10 of a general hospital which includes a special wing
11 or pavilion for the treatment of tuberculosis patients,
12 such county or city shall receive state aid in the
13 manner and subject to the terms and conditions
14 prescribed by this chapter and the rules and regula-
15 tions promulgated by the department.

16 *Section 91B.* It shall be the duty of the com-
17 missioner to formulate such standards as he may
18 deem necessary in order to carry out the objectives
19 and provisions of this chapter.

20 The commissioner shall make a detailed study of
21 the administration of existing public hospitals caring
22 for tuberculosis patients throughout the common-
23 wealth. He shall make, adopt, promulgate and
24 enforce such rules and regulations as he may deem
25 appropriate for the facilities, operation, administra-
26 tion and the future conduct of such hospitals under
27 the provisions of this chapter and he may, from time
28 to time, amend or repeal the same. He shall, on or
29 before July first, nineteen hundred and fifty forward
30 to the board of county commissioners of each county
31 and to the mayor of each city, eligible for state aid
32 under this chapter a copy of such rules and regula-
33 tions.

34 He may recommend to counties and cities such
35 changes in the facilities, operation or administration
36 of such hospitals as, in his judgment, are necessary
37 for the county or city to qualify for state aid under
38 the provisions of this chapter and the rules and
39 regulations promulgated thereunder.

40 He shall have full power and authority to examine
41 any or all records, reports and other data pertaining
42 to patients or the facilities, operation or administra-
43 tion of a hospital providing care or treatment for
44 which a county or city applies for state aid, to
45 examine or cause to be examined any patient in
46 such hospital and to make or cause to be made such
47 laboratory tests or x-ray examinations as in his
48 judgment may be desirable.

49 *Section 91C.* No state aid shall be payable under
50 the provisions of this chapter to any county or city
51 for any county or city hospital:—

52 (a) Which, in the opinion of the commissioner is
53 not providing a safe and scientific program of patient
54 care and treatment.

55 (b) Which has an appropriate bed available and
56 refuses to accept for treatment a patient who may
57 be recommended for admission to such hospital by
58 the commissioner.

59 (c) Which a tuberculosis patient is requested or
60 required to pay for his care or treatment.

61 (d) Which fails to comply with the provisions of
62 this act or the rules and regulations of the commis-
63 sioner promulgated thereunder.

64 *Section 91D.* Whenever the board of county com-
65 missioners of any county or the common council or
66 other body exercising similar powers of any city
67 shall appropriate and expend moneys for the opera-
68 tion and maintenance of a hospital wholly for the
69 care and treatment of tuberculosis patients, as pro-
70 vided in this chapter, such county or city shall
71 receive state reimbursement in the amount of fifty
72 per centum of the per diem patient cost of care and
73 treatment, but not more than three dollars per
74 patient day, as approved by the commissioner in
75 accordance with the provisions of this chapter,
76 exclusive of the cost of reconstruction or of the
77 construction of additional facilities.

78 Whenever the board of county commissioners of
79 any county or the common council or other body
80 exercising similar powers of any city shall appro-
81 priate and expend moneys for the care and treatment
82 of tuberculosis patients in a special wing or pavilion
83 of a general hospital as provided in this chapter,
84 such county or city shall receive state reimburse-
85 ment in the amount of fifty per centum of the per
86 diem patient cost of care and treatment, but not
87 more than three dollars per patient day, for each
88 patient actually cared for and treated in such wing
89 or pavilion of such general hospital.

90 The actual cost of care and treatment of tuberculosis patients in such hospitals shall be the per diem cost of operation and maintenance of such hospital, 91 to be computed annually by the commissioner from 92 annual statements showing the total cost of the 93 operation and maintenance of such hospital, ex- 94 clusive of the cost of reconstruction or of the con- 95 struction of additional facilities. The per diem cost 96 rate thus computed shall be in force for the next 97 twelve months period immediately following the 98 close of the twelve months period covered by the 99 statement from which such per diem cost was com- 100 puted.

103 Whenever any county or city shall appropriate and 104 expend moneys for the care and treatment of tuberculosis 105 patients in a hospital owned and operated by 106 some other county or city, which is currently re- 107 ceiving state aid under the provisions of this chapter, 108 the county or city operating such hospital shall be 109 paid state aid for the care of such non-resident 110 patients in the same manner and subject to the 111 same conditions as state aid for the care of resident 112 patients. The county or city operating such hospital 113 shall charge back to the county or city of residence 114 of such patients an amount equivalent to fifty per 115 centum of the per diem patient cost, but not to 116 exceed three dollars per day, for each day of such 117 patients' care.

118 *Section 91E.* The appropriations made or to be 119 made for the purposes of carrying out the provisions 120 of this chapter shall be available, in accordance with 121 certificates of approval issued or to be issued by the 122 division of accounts to the commissioner for the 123 payment of expenses of personal service and other 124 maintenance and operation, including purchase of

125 equipment and the purchases of passenger auto-
126 mobiles and for travel outside the state, necessary
127 for the administration of this chapter. The board
128 of county commissioners of each county or the
129 common council or other body exercising similar
130 powers of each city desiring to make application for
131 state aid under this chapter shall on such dates as
132 may be fixed by the commissioner submit to him
133 the request of such county or city for such state aid
134 and shall support such request with such informa-
135 tion as the commissioner may require. The com-
136 missioner shall prescribe the form in which such
137 information shall be submitted.

138 *Section 91F.* Patients shall be admitted to state
139 tuberculosis hospitals in accordance with rules estab-
140 lished by the commissioner. The superintendent
141 may admit patients from any county within the
142 state.

143 The superintendent may also admit patients from
144 any public tuberculosis hospital within the state
145 upon the request of the chief medical officer of any
146 such hospital to such state hospital in order to
147 permit such patients to receive special medical or
148 surgical care and treatment that any such hospital
149 is unable to furnish but which is available at such
150 state hospital.

151 *Section 91G.* The commissioner shall fix the rate
152 to be charged patients who voluntarily agree to pay
153 for their care either in whole or in part. With the
154 consent of the patient the commissioner may alter
155 such rate at any time.

156 At least once in each month there shall be fur-
157 nished to the clerk of the board of county commis-
158 sioners of each county a list of the patients in the

159 hospital received from such county. Such list shall
160 be accompanied by a bill in the amount of fifty per
161 centum of the unpaid balance of the patient per
162 diem cost for each such patient, but such charge
163 shall not exceed three dollars per day per patient.
164 Such bill shall be audited by the state auditor and
165 paid by the state treasurer.

166 *Section 91H.* Subject to rules of the commis-
167 sioner, the superintendent of such state institution
168 shall have the management of the institution and,
169 except as otherwise provided with respect to the
170 treasurer, shall appoint all subordinate officers of the
171 institution; and they shall be removable by him in
172 accordance with the civil service law and rules. In
173 other respects, the superintendent shall have the
174 powers and duties prescribed by law, to be exercised
175 and performed, however, subject to rules of the
176 commissioner. Nothing in this chapter shall prevent
177 the adoption by such superintendent of rules per-
178 taining to duties of officers and employees of the
179 institution under his charge or for the internal
180 government, discipline and management of the
181 institution, consistent with rules of the commissioner,
182 but any such rule of the superintendent shall be
183 subject to revocation or suspension by the com-
184 missioner.

185 *Section 91I.* The board of county commissioners
186 of any county in which there is a county tuberculosis
187 hospital established pursuant to the authorization
188 in this chapter or any other general or special law
189 shall continue the operation of such hospital, except
190 as hereinafter provided.

191 Notwithstanding the provisions of this chapter,
192 or of any other general or special law, the board of

193 county commissioners of any county maintaining a
194 county tuberculosis hospital may request the com-
195 missioner to assume responsibility for the operation
196 and maintenance of such hospital as a state tubercu-
197 losis hospital or to authorize the abolition of such
198 county tuberculosis hospital. The commissioner,
199 upon receipt of such application, shall make such
200 investigations as he may deem appropriate to protect
201 the public health or other interests of the state.
202 Following such investigation, he may certify in
203 writing to the board of county commissioners of
204 such county that such county can be adequately
205 served by a state tuberculosis hospital and that in
206 his opinion the continued operation of such county
207 tuberculosis hospital is unnecessary. On receipt of
208 any such certification the board of county commis-
209 sioners is hereby authorized to abolish such hospital
210 by resolution adopted by a majority vote of the
211 members of such board. On the abolition of any
212 such hospital the board may dispose of the property
213 and equipment thereof or direct the same to such
214 other public use as is deemed desirable within the
215 limits prescribed by law. Such board may dispose
216 of funds, or other property held in trust as is per-
217 mitted by law and the terms of any bequests relating
218 thereto.

219 However, the commissioner, following such in-
220 vestigation, may, with the approval of the governor,
221 notify such board of county commissioners that, for
222 the protection of the public health, such hospital
223 should be continued as a tuberculosis hospital under
224 state ownership and operation to serve, in addition
225 to such county, such other counties as may require
226 tuberculosis hospital or chest clinic service.

227 When the commissioner determines that the interest of the public health would be furthered by the continuance of the service of such county tuberculosis hospital under state ownership, operation and administration, said county shall be required to submit, within a period of thirty days after notice to that effect, a description of all lands then owned by the county for such tuberculosis hospital and any and all certificates or abstracts of title thereon, together with a description of the buildings and an inventory of all equipment, fixtures, supplies, furnishings, medical and household supplies, automotive equipment, and any other materials or property owned or possessed by the county for the maintenance, operation or use of such hospital, and upon notice and on a date designated by the commissioner, said county shall transfer to the state, without cost, the title to all of the property and appurtenances constituting such county tuberculosis hospital, including all lands, buildings, equipment, fixtures, supplies, furnishings, medical and household supplies, automotive equipment, and any other materials or property assigned to or for the maintenance, operation or use of such hospital, as included in the inventory hereinbefore mentioned.

252 No outstanding bonded or other indebtedness shall be assumed by the state in the event of such transfer of title as aforesaid.

255 In the event that at any time subsequent to the taking of title by the state, the commissioner determines that it is no longer economical or advisable for the state to continue the operation of such hospital, then, upon the discontinuance of such hospital by the state, the title to the land and buildings per-

261 taining thereto shall, without obligation on the part
262 of such county, revert to and be revested in such
263 county.

264 *Section 91J.* Under the conditions hereinafter
265 specified, any person who has resided in the com-
266 monwealth continuously for at least one year imme-
267 diately preceding the date on which application is
268 made for tuberculosis hospital care and treatment
269 shall be deemed to have state residence. State
270 residence so acquired shall continue until such person
271 shall have removed from the state and remained
272 therefrom for one year; provided, however, that no
273 person shall lose state residence by absence from the
274 state while serving in the armed forces of the United
275 States or in the United States merchant marine, or
276 while attached to and serving with the armed forces
277 of the United States and, provided, further, that no
278 member of the family of any such person shall lose
279 state residence by absence from the state while
280 living with or near such person during the period of
281 such service and on account thereof.

282 Under the conditions hereinafter specified, any
283 person with state residence as herein defined who
284 has also resided within a county of the common-
285 wealth continuously for at least six months preceding
286 the date on which application is made for tubercu-
287 losis hospital care and treatment shall be deemed to
288 have local residence in such county.

289 The continuous residence required to acquire
290 either state residence or local residence shall not
291 include any period during which the person was (a)
292 a patient in a hospital, or (b) an inmate of any
293 public institution, incorporated private institution,
294 or private tuberculosis home, cottage or hospital,

295 or (c) residing on any military reservation. If,
296 however, the periods of residence immediately prior
297 and subsequent to the periods specified in (a), (b)
298 or (c) shall together equal the required period of
299 residence, such person shall be deemed to have the
300 required continuous residence.

301 *Section 91K.* (1) State charge shall mean any
302 person suffering from tuberculosis or suspected of
303 having tuberculosis and in need of tuberculosis
304 hospital care and treatment therefor who is:—

305 (a) Without state residence.

306 (b) With state residence, but without local resi-
307 dence.

308 (2) Local charge shall mean any person suffering
309 from tuberculosis or suspected of having tuberculosis
310 and in need of tuberculosis hospital care and treat-
311 ment therefor who has acquired local residence, as
312 defined in this chapter.

313 (3) State resident shall mean any person suffering
314 from tuberculosis or suspected of having tuberculosis
315 and in need of tuberculosis hospital care and treat-
316 ment therefor who has resided within the state for
317 one year preceding the date of application for treat-
318 ment.

319 (4) Local resident shall mean any person suffering
320 from tuberculosis or suspected of having tuberculosis
321 and in need of tuberculosis hospital care and treat-
322 ment therefor who has acquired a state residence
323 and has resided within a single county for at least six
324 months preceding application for treatment.

325 *Section 91L.* Notwithstanding any inconsistent
326 provision of this chapter or of any other general or
327 special or city charter, care and treatment provided
328 by the state, or by any county or city for persons

329 suffering from tuberculosis, and diagnoses, tests,
330 studies and analyses for the discovery of tuberculosis,
331 shall be available without cost or charge to any person
332 having state residence and in the discretion of the
333 commissioner to any other person in the state who is
334 suffering from tuberculosis or is suspected of having
335 tuberculosis. The commissioner may designate any
336 local public official to act for him in emergency cases
337 involving nonresidents of the state. Any person
338 who volunteers to assume and pay for the cost of
339 such care and treatment or for the cost of such
340 diagnosis, test, study or analysis shall be permitted
341 to do so; but no state, county, city or other public
342 official shall request or require such payment or
343 make, or cause to be made, any inquiry or investiga-
344 tion for the purposes of determining the ability of
345 such person or of his legally responsible relatives to
346 pay therefor.

347 The care and treatment of persons suffering from
348 tuberculosis or suspected of having tuberculosis
349 which are provided by the commonwealth or by any
350 county or city shall include procedures and services
351 as defined by the commissioner.

352 *Section 91M.* Whenever, on and after July first,
353 nineteen hundred and fifty, state charges shall re-
354 ceive care and treatment in state tuberculosis hospi-
355 tals, the cost of such care and treatment shall be
356 fully met by such hospitals out of moneys appro-
357 priated therefor.

358 Whenever, on and after July first, nineteen hun-
359 dred and fifty, state charges shall receive care and
360 treatment pursuant to the provisions of this chapter,
361 other than in state tuberculosis hospitals, the cost
362 of such care and treatment shall be reimbursed by

363 the state department of public health as hereinafter
364 provided and subject to the regulations of the
365 commissioner.

366 *Section 91N.* The provisions contained in sections
367 sixty-five, sixty-five A and sixty-six relative to the
368 settlement of persons receiving treatment in state,
369 county or city sanatoria shall not apply to persons
370 suffering from tuberculosis.

1 SECTION 2. Section seventy-six of said chapter
2 one hundred and eleven is hereby repealed.

1 SECTION 3. This act shall take effect on July
2 first, nineteen hundred and fifty.

APPENDIX 4.**The Commonwealth of Massachusetts**

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT AUTHORIZING THE DEPARTMENT OF PUBLIC HEALTH TO ERECT A BUILDING TO HOUSE AND MAINTAIN THE DIVISIONS AND BUREAUS OF SAID DEPARTMENT EXCEPT THE DIVISION OF BIOLOGIC LABORATORIES, AND THE FIELD UNITS OF THE DEPARTMENT.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 The department of public health is hereby authorized to purchase a suitable site and to erect thereon
2 a building, having a floor space of approximately one
3 hundred thousand square feet, to house and main-
4 tain the divisions and bureaus of said department,
5 except the division of biologic laboratories and the
6 field units of the department.
7

8 For said purposes said department may expend
9 such sums not exceeding in the aggregate two million
10 five hundred thousand dollars, as may hereafter be
11 appropriated therefor.

APPENDIX 5.**The Commonwealth of Massachusetts**

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT TRANSFERRING THE STATE REGISTRAR OF VITAL STATISTICS FROM THE DEPARTMENT OF STATE SECRETARY TO THE DEPARTMENT OF PUBLIC HEALTH.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 SECTION 1. Chapter nine of the General Laws, as
2 appearing in the Tercentenary Edition, is hereby
3 amended by striking out section ten.

1 SECTION 2. Chapter 17 of the General Laws, as
2 appearing in the Tercentenary Edition, is hereby
3 amended by inserting after section 9 the following
4 new section:—

5 *Section 10.* The commissioner of public health
6 may, with the approval of the public health council,
7 appoint and remove a state registrar of vital statis-
8 tics, who shall be a competent statistician. The said
9 registrar may, under the direction of the said com-
10 missioner of public health, enforce all laws relative
11 to the registry and return of births, marriages and

12 deaths, and may prosecute in the name of the com-
13 monwealth any violations thereof.

1 SECTION 3. The registrar shall have custody of
2 all records of vital statistics including those formerly
3 in the office of the secretary of state.

APPENDIX 6.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

**AN ACT RELATIVE TO THE ORGANIZATION OF UNION HEALTH
DEPARTMENTS.**

*Be it enacted by the Senate and House of Representatives
in General Court assembled, and by the authority of the
same, as follows:*

1 SECTION 1. Two or more cities or towns may, by
2 vote of the city council and approval of the mayor in
3 the city, and by vote of the town, form a union health
4 department which shall have all the powers and shall
5 perform all the duties exercised or performed, im-
6 mediately prior to the effective date of this act, by
7 the board of health of the constituent municipalities
8 under any law or ordinance pertaining thereto, and
9 shall perform any further duties and shall have further
10 powers required of or conferred upon the local boards
11 of health of the constituent municipalities by law
12 or ordinance or required of or conferred upon local
13 boards of health of municipalities by law, except
14 insofar as the union board of health may by vote
15 delegate certain responsibilities to the boards of
16 health of the constituent cities and towns. The
17 union health department shall be administered by a
18 full time director of health, who shall be a physician

19 graduated from an approved school of medicine and
20 registered or eligible for registration to practice medi-
21 cine in the commonwealth or who shall have had
22 such experience and training which in the opinion
23 of the department will qualify him as director of
24 health. The union board of health shall be comprised
25 of one representative from each constituent municipi-
26 pality and municipalities having a population greater
27 than thirty-five thousand shall have one additional
28 representative for every population unit of thirty-five
29 thousand or fraction thereof beyond the first thirty-
30 five thousand. In no instance shall there be more
31 than five representatives from a single municipality
32 in such a union board of health. Such representatives
33 shall be appointed by the board of health in those
34 municipalities where boards of health are elected.
35 In cities and towns where the local board is not elected,
36 such representatives shall be appointed by the mayor
37 with the approval of the city council unless a definite
38 mode of appointment is provided in the city charter,
39 and in towns shall be appointed by the board of
40 selectmen except when other provision is made by
41 law. They shall serve for a period of three years.
42 The representatives of the union boards of health
43 shall be elected or appointed in such manner that
44 approximately one third will be elected or appointed
45 each year. The members of the union board shall
46 serve without compensation but shall receive their
47 necessary traveling expenses while in the performance
48 of their official duties. The union board of health
49 shall meet annually and at such other times as it
50 shall determine by its rules or when requested by
51 the chairman or director of health. When the union
52 of such cities and towns consists of one or more entire
53 counties, the county commissioners of each such

54 county shall elect from their membership a repre-
55 sentative to the union board of health.

1 SECTION 2. Prior to the vote in municipalities
2 relative to the formation of any such proposed unions
3 local boards of health or the county commissioners
4 shall apply to the state department of public health
5 for the formation of a union board of health. If a
6 city or town fails to adopt necessary legislation to
7 become a member of the proposed union then the
8 department shall determine the suitability of the
9 union of the remaining municipalities. All munici-
10 palities having a population of less than thirty-five
11 thousand shall, within ten years of the effective date
12 of this act, become voluntarily members of such
13 health unions. If, after ten years from said effective
14 date, municipalities having a population of less than
15 thirty-five thousand are not included voluntarily in
16 such unions the state department of public health
17 after a public hearing shall include such municipalities
18 in existing or new unions unless such communities
19 are providing minimum health services as defined by
20 the public health council. Any constituent city or
21 town may, by vote passed prior to July first in any
22 year withdraw from the union, such withdrawal be-
23 coming effective January first following; provided,
24 that the city or town shall have been a member of
25 the union for at least five years; and, provided
26 further, that provision is made for its inclusion,
27 subject to the approval of the state department of
28 public health, in a separate or another union.

1 SECTION 3. The union board shall select a treas-
2 urer who may be the treasurer of one of the cities or
3 towns in the union to act as treasurer for such union.

4 Said treasurer shall give to the union board of health
5 bond with a surety company authorized to transact
6 business in the commonwealth as surety for the faith-
7 ful performance of his duties in such sums and upon
8 such conditions as the union board of health may
9 require. Said union board of health, annually in the
10 month of December, shall estimate the amount of
11 money required to pay the costs and expenses of the
12 department for the following year, shall fix and deter-
13 mine the proportion of such costs and expenses to be
14 paid by the representative cities and towns thereof
15 during such year and shall certify the amount so
16 determined for each city and town to the assessors
17 thereof who shall include same in the tax levies of
18 each year. Such apportioned costs shall be on a
19 per capita basis, the total budget of the union being
20 divided by the population exclusive of population
21 in county, state or Federal institutions. Upon
22 order of the union board of health the treasurer of
23 each constituent municipality thereof shall, from
24 time to time, subject to the provisions of section
25 fifty-two of chapter forty-one of the General Laws
26 pay to the union treasurer such sums not exceeding
27 the amount certified by the union board of health
28 as the municipality's share of the cost and expenses
29 of the union. The union treasurer shall distribute
30 the money so received, upon warrant approved by
31 the director of health and signed by the chairman or
32 vice chairman of the union board.

1 SECTION 4. The union board of health shall
2 appoint and may remove for cause, after public
3 hearing, a director of health. The director shall
4 serve as secretary of the board but shall have no

5 vote. He shall be the executive and administrative
6 head of the union health department and may, with
7 the approval of the union board, designate one or
8 more deputies and may appoint and employ in ac-
9 cordance with chapter thirty-one such assistants
10 as may be provided for in the budget. He shall
11 prepare and present annually to the union board a
12 report and a budget for its approval together with
13 such recommendations as he may deem proper. The
14 union board of health shall make and promulgate
15 reasonable rules and regulations, take evidence in
16 appeals, consider plans and appointments required
17 by law, hold hearings, and discharge other duties
18 required by law; but it shall have no administrative
19 or executive functions. The union board of health
20 may delegate the holding of hearings to the director
21 or deputy director. The union board may elect an
22 executive committee consisting of the chairman, vice-
23 chairman, secretary and such other members as its
24 rules may determine. Said executive committee
25 shall have power to act when the union board is not
26 in session.

1 SECTION 5. All persons holding office or employ-
2 ment, except the director, in the union board of health
3 shall be subject to the provisions of chapter thirty-
4 one of the General Laws, and the full-time incumbents
5 of any office or position brought under the union
6 board of health shall be transferred to the union board
7 of health without impairment of status, and the
8 positions placed within the civil service in accordance
9 with provisions of said chapter thirty-one. Employees
10 of the union board of health shall be eligible for the
11 retirement system as provided in chapter thirty-two
12 of the General Laws.

A P P E N D I X 7 .**The Commonwealth of Massachusetts**

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT PROVIDING FINANCIAL ASSISTANCE BY THE COMMONWEALTH FOR UNION HEALTH DEPARTMENTS.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 The department of public health hereinafter called
2 the department, is hereby authorized to expend such
3 sums as hereinafter may be appropriated to assist
4 financially local health departments. To be eligible
5 for such subsidy, the union or local health department
6 shall conform to the regulations which the department
7 is hereby authorized to establish relative to minimum
8 standards of performance, and personnel including
9 training, experience and compensation. The depart-
10 ment shall, after public hearing, devise and from time
11 to time amend a formula, which shall take into con-
12 sideration, the population, financial and health needs
13 of the local health departments for equitable distribu-
14 tion of such funds. The appropriations, becoming
15 available to the department on July first, shall be
16 made available to the municipalities on January first
17 of the following year and be effective for the next
18 calendar year. The union and municipal health de-

19 partment shall furnish to the department such reports
20 as it may require from time to time, and the accounts
21 of any union or municipal health department receiving
22 such subsidy shall be open to inspection by repre-
23 sentatives of the department. The department shall
24 reimburse the approved local health departments to
25 the extent of the allotment as determined by the
26 formula on a quarterly basis in accordance with such
27 rules and regulations as the department may formulate.

APPENDIX 8.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT RELATIVE TO MILK SUPPLIES.

*Be it enacted by the Senate and House of Representatives
in General Court assembled, and by the authority of the
same, as follows:*

1 Chapter 94 of the General Laws is hereby amended
2 by striking out section 16H, as inserted by chapter
3 305, acts of 1932, and substituting therefor the fol-
4 lowing new section:—

5 *Section 16H.* If from time to time the board finds
6 that a shortage of milk exists or is threatened any-
7 where within the commonwealth, said board may de-
8clare an emergency and permit the importation of
9 milk within the commonwealth, from such localities
10 and areas and in such quantity as the board may
11 deem wise, assembled from dairies to which the cer-
12 tificate of registration has not been issued. No milk
13 of this nature, which shall be known as "emergency
14 milk," shall be received, accepted, sold, delivered, or
15 held in possession with intent to sell or deliver by a
16 Massachusetts dealer unless the creamery, receiving
17 station, or other milk plant in which such milk has
18 been assembled for shipment into this commonwealth
19 has first obtained a permit in full force and effect for

20 such shipment from the director. No permit shall be
21 issued by the director under this section until an
22 emergency has been declared by the board and au-
23 thorization for such issue received from the board.
24 The director, prior to issuing emergency permits un-
25 der this section, shall satisfy himself that the plant
26 from which such milk is to be shipped is in a satis-
27 factory sanitary condition and conforms to the regu-
28 lations of the board pertaining to the operation of
29 milk plants. He shall further satisfy himself that the
30 milk intended for shipment conforms to the Massa-
31 chusetts laws and regulations both as to quality and
32 sanitary condition. If the milk intended for ship-
33 ment is to be pasteurized within the commonwealth
34 upon receipt, such milk shall conform to the board's
35 standards for milk, raw. Emergency milk received
36 into the commonwealth and not conforming to the
37 standards of quality or sanitation as set forth in sec-
38 tion twelve or in the regulations of the milk regula-
39 tion board shall not be received, accepted, or subse-
40 quently delivered or sold as fluid milk by the dealer.
41 No permit shall be issued until the shipper, owner,
42 or operator of the creamery, assembling plant, or
43 shipping station located without the commonwealth
44 has agreed in writing to notify by telegram the direc-
45 tor, prior to actual shipment, as to the date of each
46 shipment, the quantity of milk involved in each
47 shipment, the anticipated date of arrival within the
48 commonwealth, the destination point, and the name
49 of the consignee. Any permit issued under this sec-
50 tion may be revoked by the director for failure on
51 the part of the shipper, owner, or operator of the
52 creamery, assembling plant, or shipping station, al-
53 ready referred to, to comply with the foregoing noti-

54 fication requirement or with the regulations of the
55 milk regulation board pertaining to milk plants.
56 Any permit issued under this section shall be revoked
57 by the director if the department of public health
58 finds that emergency milk at the time of its arrival
59 within the commonwealth does not conform to the
60 standards of quality or sanitation required by statute
61 or regulations of the board and requests such revo-
62 cation.

63 Whoever violates any provision of this section shall
64 for the first offence be punished by a fine of not less
65 than fifty dollars nor more than five hundred dol-
66 lars, and for a subsequent offence by a fine of not
67 less than two hundred dollars nor more than one
68 thousand dollars, or by imprisonment for not more
69 than three months or both.

APPENDIX 9.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT RELATIVE TO CONTROL OVER CREAM.

*Be it enacted by the Senate and House of Representatives
in General Court assembled, and by the authority of the
same, as follows:*

1 SECTION 1. Section 42 of chapter 94 of the General
2 Laws, as most recently amended by chapter 496 of
3 the acts of 1946, is hereby amended by inserting
4 after the word "milk", appearing in the fifth sentence
5 which begins with the words "Said board after hold-
6 ing a public hearing," the words:— and cream —,
7 so that the section will read as follows:— *Section 42.*
8 There shall be a milk regulation board, consisting
9 of the commissioner of agriculture, the commissioner
10 of public health, the chairman of the milk control
11 board and the attorney general. The chairman of
12 the milk control board shall act as chairman of the
13 milk regulation board. The commissioner of agricul-
14 ture may delegate his authority as a member of this
15 board to the director of the division of dairying and
16 animal husbandry. The commissioner of public
17 health and the attorney general, respectively, may
18 delegate their authority as such members to such of
19 their assistants as they may designate. Said board

20 after holding a public hearing, notice of which shall
21 have been given at least two weeks prior to the date
22 of the hearing by publication in each county in a
23 newspaper of general circulation therein, shall estab-
24 lish and promulgate rules and regulations pertaining
25 to the sanitation, transportation, packaging and
26 handling of milk and cream, including uniform mini-
27 mum requirements for the inspection of dairy farms
28 producing milk for distribution, sale or exchange in
29 the commonwealth, and may from time to time
30 amend, modify, repeal or suspend such rules and
31 regulations, first giving notice as provided above
32 of such proposed amendment, modification, repeal
33 or suspension. Said board shall provide suitable
34 uniform cards for the classification of dairy farms
35 producing milk for said purposes, and shall furnish
36 suitable plans, information and advice relative to the
37 construction, installation and development of facilities
38 for improving the quality of milk. The board shall
39 meet at least once in three months, but may meet
40 at any time upon request of its chairman or any
41 member.

1 SECTION 2. Section 16J of chapter 94, inserted
2 by chapter 542, acts of 1946, is hereby amended by
3 adding after the word "milk" wherever the word
4 "milk" appears alone, the words: — and/or cream, —
5 so that this section will read as follows: — *Section*
6 *16J.* The milk regulation board shall establish
7 from time to time, and may alter, amend or repeal,
8 rules and regulations governing the handling and
9 sale of milk and/or cream within the cities and towns
10 of the commonwealth, including the transportation
11 of milk and/or cream from the farm to a milk plant,

12 receiving station or pasteurization plant located within
13 the commonwealth, and the transportation of milk
14 and/or cream from the farm to a milk plant, receiving
15 station or pasteurization plant located outside the
16 commonwealth, which milk and/or cream is intended
17 for shipment thereafter into the commonwealth.
18 It shall also establish from time to time, and may
19 alter, amend or repeal, rules and regulations governing
20 all milk plants, receiving stations and pasteurization
21 plants, wherever located, shipping milk and/or cream
22 into or within the commonwealth. Boards of health
23 of cities and towns may establish from time to time,
24 and may alter, amend or repeal, rules and regulations
25 for the handling and sale of milk within said cities
26 and towns; but such rules and regulations, unless
27 consistent with rules and regulations established by
28 the milk regulation board and then in force, shall not
29 take effect until they have been specifically approved
30 by said board after hearing thereon.

1 SECTION 3. Strike out section sixteen L of chapter
2 ninety-four as inserted by chapter five hundred and
3 forty-two of the acts of nineteen hundred and forty-
4 six and insert in place thereof the following section —
5 *Section 16L.* Whoever sells, exchanges or delivers,
6 or has in his possession with intent to sell, exchange
7 or deliver, milk and/or cream shipped into or within
8 the commonwealth from a milk plant, receiving
9 station or pasteurization plant which has not been
10 inspected and approved, or does not hold a permit
11 in full force and effect as provided in section sixteen K;
12 shall be punished for a first offence by a fine of not less
13 than one hundred nor more than five hundred dollars,
14 for a second offence by a fine of not less than five

15 hundred nor more than one thousand dollars, and for
16 a subsequent offence by a fine of one thousand dollars
17 and by imprisonment for not less than three months.
18 This section shall not apply to any sale, exchange or
19 delivery of milk brought into the commonwealth
20 under a temporary permit issued under section sixteen
21 H.

1 SECTION 4. Strike out section 16K of chapter 94
2 of the General Laws, inserted by chapter 542 of the
3 acts of 1946, as most recently amended by chapter
4 379 of the acts of 1947 and insert in place thereof the
5 following section:—*Section 16K.* The department
6 of agriculture shall inspect milk plants and receiving
7 stations, wherever located, and pasteurization plants
8 outside the commonwealth, shipping milk or cream
9 into or within the commonwealth and, if the same be
10 found to be in compliance with all rules and regulations
11 relating thereto, shall approve them and shall issue
12 permits showing such approval. Every such permit
13 shall expire on the thirtieth day of June following its
14 issue, and may be suspended or revoked for the failure
15 of the establishment to which it was issued to comply
16 with rules and regulations relating thereto or for a
17 violation, by such establishment, of any law relating
18 to milk or cream intended for sale within the common-
19 wealth. Upon request of the commissioner of public
20 health, the department of agriculture shall suspend or
21 revoke any such permit if said commissioner of public
22 health has determined that the product being shipped
23 into or within the commonwealth under said permit
24 does not comply with the regulations of the milk
25 regulation board or is adulterated or otherwise in
26 violation of law. Upon the application of any city or

27 town, said department may delegate to the inspector
28 of milk thereof its authority to inspect milk plants,
29 receiving stations and pasteurization plants from which
30 milk is shipped to such city or town, and submit in-
31 spection reports to said department, which reports
32 shall form the basis of its issuance of such permits.
33 A pasteurization plant located outside the common-
34 wealth shall pay a fee of ten dollars for such a permit,
35 but permits shall be issued to milk plants and re-
36 ceiving stations without cost. If any city or town to
37 the milk inspector of which the power of inspection
38 is delegated under any provision of this section fails
39 to enforce rules and regulations established by the
40 milk regulation board and then in force, said delega-
41 tion of authority shall forthwith terminate.

APPENDIX 10.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT RELATIVE TO SLAUGHTERING.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 SECTION 1. Section 119 of chapter 94 of the General
2 Laws, as most recently amended by chapter 332 of
3 the acts of 1943, is hereby amended by substituting
4 for the words "one dollar" at the end of the second
5 sentence the words:— ten dollars,— so that said
6 section shall read as follows:— *Section 119.* The
7 aldermen, selectmen, or such other officers as they shall
8 designate, or, in a town having a population of more
9 than five thousand, the board of health, if any, may
10 annually issue licenses to carry on the business of
11 slaughtering neat cattle, horses, mules, sheep or
12 swine to applicants therefor. Except as provided in
13 sections one hundred and twenty and one hundred
14 and twenty A, the fee for each license shall be ten dol-
15 lars. The license shall name the persons licensed to
16 conduct such business, and the building or establish-
17 ment where it is to be carried on, and it shall continue
18 in force until May first of the year next ensuing, unless
19 sooner forfeited or rendered void. A record shall be

20 kept by the board or officers authorized to issue such
21 licenses of all applications for licenses under section
22 one hundred and eighteen and of all licenses issued,
23 which shall be evidence of the issue of any such
24 license. Such board or officers shall annually, on or
25 before June first, send to the department of public
26 health a copy of each application made to them under
27 section one hundred and eighteen and of their action
28 thereon, together with a list of the names and addresses
29 of all persons who, although engaged in the business
30 named in said section on the preceding April thirtieth,
31 failed to make application for a license.

1 SECTION 2. Chapter 94 of the General Laws is
2 hereby amended by striking out section 120, as
3 amended by chapter 332 of the acts of 1943, and sub-
4 stituting therefor the following new section:—

5 *Section 120.* In cities and towns which accept this
6 section the annual license fee for carrying on the busi-
7 ness of slaughtering neat cattle, horses, mules, sheep
8 or swine shall be such sum, not exceeding one hundred
9 dollars, as the aldermen or selectmen fix.

1 SECTION 3. Chapter 94 is hereby further amended
2 by striking out section 120A, as most recently amended
3 by chapter 332 of the acts of 1943, and substituting
4 in place therefor the following new section:—

5 *Section 120A.* A city or town which accepts this
6 section may, in addition to the annual fee under section
7 one hundred and nineteen or one hundred and twenty,
8 for a license to carry on the business of slaughtering
9 neat cattle, horses, mules, sheep or swine, require the
10 payment by the licensee of a further fee of not exceed-
11 ing one dollar for each animal slaughtered under such

12 license, but such further fee shall not be required for
13 any animal slaughtered under federal inspection. Ad-
14 ditional fees provided for under this section shall be
15 paid only by the licensee or his authorized agent and
16 only to the city or town treasurer at such times and in
17 such manner as the aldermen or selectmen by vote
18 determine. The inspector referred to in section one
19 hundred and twenty-six shall not act in the capacity
20 of such authorized agent.

1 SECTION 4. Section 129 of chapter 94, as amended
2 by chapter 213 of the acts of 1946, is hereby further
3 amended by striking out the word "human" so that
4 this section will then read as follows:— *Section 129.*
5 Carcasses of animals slaughtered under sections one
6 hundred and eighteen, one hundred and nineteen, one
7 hundred and twenty-five to one hundred and twenty-
8 seven, inclusive, and one hundred and thirty-three
9 and not stamped or branded as provided in section
10 one hundred and twenty-seven, and all other carcasses
11 of neat cattle, horses, mules, sheep or swine which
12 have not been slaughtered, inspected and stamped or
13 branded, as provided in said sections, shall be deemed
14 unfit for food and shall not be sold or offered for sale.

1 SECTION 5. Section 130 of chapter 94, as amended
2 by chapter 213 of the acts of 1946, is hereby further
3 amended by striking out the word "human" and in-
4 serting after the word "counterfeits" the words:— ,
5 procures or has in his possession,— so that this section
6 will then read as follows:— *Section 130.* Whoever
7 sells, or offers for sale, or has in his possession with
8 intent to sell, a carcass or any part thereof deemed
9 unfit for food, as provided in section one hundred and

10 twenty-nine, or whoever, not being a member of a
11 local board of health or duly appointed inspector,
12 stamps or brands a carcass or any part thereof re-
13 quired by section one hundred and twenty-seven or
14 one hundred and thirty-three to be stamped or
15 branded, or whoever being a member of a board of
16 health or a duly appointed inspector permits or allows
17 the use of his stamp or brand by one not a member of
18 a board of health or duly appointed inspector, or
19 whoever counterfeits, procures or has in his possession
20 any stamp or brand required by section one hundred
21 and twenty-seven, or whoever stamps or brands any
22 carcass or part thereof with any counterfeit stamp or
23 brand, shall be punished by a fine of not more than
24 one hundred dollars or by imprisonment for not more
25 than two months, or both.

1 SECTION 6. Chapter 94 is hereby further amended
2 by striking out section 131, as amended by chapter 332
3 of the acts of 1943, and inserting in place thereof the
4 following section:—

5 *Section 131.* Carcasses of neat cattle, horses, mules,
6 sheep or swine slaughtered without the commonwealth
7 shall be deemed unfit for food, and shall not be sold
8 or offered for sale unless they have been inspected at
9 the time of slaughter by an inspector of the Bureau
10 of Animal Industry of the United States Department
11 of Agriculture and have been stamped or branded by
12 said inspector; or, in the case of carcasses slaughtered
13 outside the United States, unless they have been in-
14 spected at the time of slaughter in a manner and under
15 certification acceptable to the Bureau of Animal
16 Industry of the United States Department of Agricul-
17 ture and have subsequently been examined and

18 stamped or branded by said Bureau of Animal Indus-
19 try.

1 SECTION 7. Section 132 of chapter 94, as appearing
2 in the Tercentenary Edition, is hereby amended by
3 adding after the word "sale" in line 1 the word:—
4 handles,— so that this section will read as follows:—
5 *Section 132.* Whoever sells or offers for sale, handles,
6 or has in his possession with intent to sell, a carcass,
7 or any part thereof, required by the preceding section
8 to be stamped or branded, and which has not been
9 stamped or branded as therein provided, shall be
10 punished by a fine of not more than one hundred dol-
11 lars or by imprisonment for not more than two months,
12 or both.

1 SECTION 8. Section 137 of chapter 94, as appear-
2 ing in the Tercentenary Edition, is hereby amended
3 by adding after the word "section" in line 1 the
4 words:— one hundred and thirty,— so that this
5 section will then read as follows:— *Section 137.* A
6 conviction under section one hundred and thirty, one
7 hundred and thirty-four or one hundred and thirty-
8 five of any person licensed under section one hundred
9 and nineteen shall render his license void, and no new
10 license shall be granted to him for the balance of the
11 term of the license so rendered void.

1 SECTION 9. Section 1 of chapter 94, as appearing
2 in the Tercentenary Edition, is hereby amended by
3 adding in the definition of "food", after the word
4 "sections", in line 89, the following words:— one
5 hundred and eighteen to one hundred and fifty-one,
6 inclusive,— so that the definition of "food" will then

7 read as follows:— “Food”, in sections one hundred
8 and eighteen to one hundred and fifty-one, inclusive,
9 one hundred and fifty-four to one hundred and fifty-
10 six, inclusive, one hundred and eighty-one, and one
11 hundred and eighty-six to one hundred and ninety-
12 six, inclusive, includes all articles, whether simple,
13 mixed or compound, used for food or drink, confec-
14 tionery or condiment, by man or animal.

A P P E N D I X 11.**The Commonwealth of Massachusetts**

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT RELATIVE TO THE HANDLING AND SALE OF DEAD LOBSTERS, SIMILAR CRUSTACEA, LOBSTER MEAT AND CRAB MEAT.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 SECTION 1. Section 45 of chapter 130 of the
2 General Laws, inserted by chapter 598 of the acts
3 of 1941, is hereby amended by adding at the end
4 thereof the following:—“The director and the
5 department of public health shall enforce this sec-
6 tion.”,—so as to read as follows:—*Section 45.*
7 Whoever cooks, buys, sells, offers or exposes for
8 sale, gives away or knowingly delivers, transports,
9 ships or receives for food purposes any lobster or
10 similar species of Crustacea, or any part thereof,
11 which is uncooked and dead or which was cooked
12 after it was dead, shall be punished by a fine of not
13 less than ten nor more than fifty dollars or by im-
14 prisonment for not less than ten nor more than sixty
15 days, or both. The director and the department of
16 public health shall enforce this section.

1 SECTION 2. Said chapter 130 is hereby further
2 amended by striking out section 46, as inserted by
3 chapter 598, acts of 1941, and inserting in place
4 thereof the following section:—

5 *Section 46.* No person shall buy, sell, expose for
6 sale, give away, deliver, transport, ship, carry or
7 have in his possession any lobster meat or crab
8 meat after the same has been taken from the shell,
9 except as hereinafter provided. Any lobster meat
10 or crab meat unlawfully sold, given away, shipped,
11 bought, transported or possessed shall be liable to
12 seizure and may be confiscated. The foregoing shall
13 not apply to such lobster meat or crab meat in the
14 possession of a common carrier for transportation
15 and which is marked as provided in section forty-
16 seven, or of which it has no notice; nor to canned
17 lobster meat or crab meat when certified to the
18 satisfaction of the department of public health by
19 the board of health or a body having similar powers
20 of the municipality or other governmental unit
21 where canned to have been in a suitable condition
22 for human consumption when canned and to have
23 been canned under healthful conditions and so as
24 to insure the continuance until use of such condition;
25 nor to such meat sold for food by a licensed victualer
26 if such meat has been obtained from a dealer holding
27 a permit as hereinafter provided; nor to such meat
28 removed from the shell on the premises where it is
29 to be eaten; nor to such meat removed from the
30 shell by a wholesale or retail processor of or dealer
31 in lobster or edible crabs at a regular place of busi-
32 ness therefor if said processor or dealer has a permit,
33 as hereinafter required, in full force and effect, from

34 the department of public health and if the premises
35 or establishment named in the said permit are
36 conducted and operated and such meat is so re-
37 moved, handled, prepared, packed, stored, kept,
38 sold or delivered under such conditions and in ac-
39 cordance with such regulations as the department
40 of public health shall prescribe. The department of
41 public health shall enforce the provisions of this
42 section relating to the processing of lobsters and
43 crabs and the removal of lobster and crab meat
44 from the shell and for this purpose may adopt rules
45 and regulations governing the construction, main-
46 tenance and operation of establishments engaged
47 in such processing or in the wholesale or retail dis-
48 tribution of processed or cooked lobsters and crabs
49 or lobster and crab meat. Such rules and regulations
50 may include provisions and requirements as to the
51 handling and care of the live lobsters and crabs, the
52 processing or cooking operations, the subsequent
53 handling of the cooked product and the conditions
54 under which the meat is removed from the shell and
55 thereafter handled, prepared, packed, stored, held,
56 sold or delivered.

57 No person, firm or corporation shall engage in
58 the processing or cooking of lobsters and edible
59 crabs for subsequent wholesale or retail delivery
60 or in the removal of lobster or crab meat from the
61 shell for purposes of sale without a permit from the
62 department of public health. The said department
63 may annually issue permits to suitable applicants
64 upon receipt of satisfactory evidence that the estab-
65 lishment named in the application is constructed
66 and is to be operated and maintained in accordance
67 with the rules and regulations. The applicant shall

68 tender with the application the permit fee of ten
69 dollars. Each permit shall expire on December
70 thirty-first next succeeding the date of issue and
71 may be suspended or revoked by the department of
72 public health for violation of any rule or regulation
73 made under the provisions of this section or for a
74 conviction under section forty-five or for a conviction
75 under sections one hundred and eighty-six to one
76 hundred and ninety-five, inclusive, of chapter ninety-
77 four.

78 Each permittee shall cause each package or
79 other container of lobster meat or crab meat to
80 be labeled plainly and conspicuously with the
81 words "Lobster meat (or crab meat, as the case
82 may be,) removed under permit number "
83 followed by the number of the permit under which
84 said meat was removed.

85 The license provisions of this section shall not
86 apply to a hotel, restaurant or boarding house
87 engaged in the processing or cooking of lobsters
88 or crabs or in the removal of lobster and crab meat
89 from the shell intended for consumption on the
90 immediate premises by his patrons. Whoever
91 violates any provision of this section or any rule
92 or regulation of the department of public health
93 made hereunder shall for a first offence be punished
94 by a fine or not less than twenty-five nor more than
95 five hundred dollars, and for a subsequent offence
96 by a fine of not less than one hundred nor more
97 than one thousand dollars, or by imprisonment
98 for not more than six months or both.

APPENDIX 12.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT RELATIVE TO SANITARY FOOD.

*Be it enacted by the Senate and House of Representatives
in General Court assembled, and by the authority of the
same, as follows:*

1 SECTION 1. Section 305A of chapter 94 of the
2 General Laws, as amended by chapter 362 of the acts
3 of 1937, is hereby amended by adding at the end
4 thereof the following paragraphs:—

5 The department of public health shall be authorized
6 to establish rules and regulations setting forth mini-
7 mum standards for the enforcement of this section.

8 Whoever violates any rule or regulation made under
9 the authority of this section shall be punished for the
10 first offence by a fine of not more than one hundred
11 dollars and for a subsequent offence by a fine of not
12 more than five hundred dollars, — so as to read as
13 follows: — *Section 305A.* Unless another penalty is
14 provided under this chapter, whoever for the purpose
15 of sale manufactures, prepares, packs, cans, bottles,
16 keeps, exposes, stores, handles, serves or distributes
17 in any manner, food in or from an unclean unsanitary
18 or unhealthful establishment, place or vehicle or
19 under unclean, unsanitary or unhealthful conditions

20 shall be punished for the first offence by a fine of not
21 more than one hundred dollars and for a subsequent
22 offence by a fine of not more than five hundred dol-
23 lars. The provisions of this section relative to the
24 keeping or exposing for sale of food shall not apply
25 in any city or town where rules and regulations made
26 by its board of health under section one hundred and
27 forty-six, or corresponding provisions of earlier laws,
28 are in force. For the purposes of this section, the
29 word "food" shall mean and include all articles,
30 whether simple, mixed or compound, used or intended
31 to be used for food or drink, confectionery or condi-
32 ment, by human beings, except milk and cream.

33 The department of public health shall be authorized
34 to establish rules and regulations setting forth mini-
35 mum standards for the enforcement of this section.

36 Whoever violates any rule or regulation made under
37 the authority of this section shall be punished for the
38 first offence by a fine of not more than one hundred
39 dollars and for a subsequent offence by a fine of not
40 more than five hundred dollars.

1 SECTION 2. Said chapter 94 of the General Laws
2 is hereby further amended by adding the following
3 new sections:—

4 *Section 305C. Definitions.*—For the purposes of
5 section three hundred and five D the following words
6 shall have the following meaning:—

7 "Catering", the act of engaging in the purveying of
8 food and/or drink in places of assembly, whether in-
9 doors or out of doors, and who do not come within the
10 meaning of the law as applied to that type of purveyors
11 of food known as common victuallers.

12 "Itinerant restaurant", a business that is estab-

13 lished for thirty days, or less, for the purpose of pre-
14 paring, processing, keeping, exposing, storing, dis-
15 tributing in any manner, or serving food, and/or drink,
16 at fairs, bazaars, circuses or like places.

17 “Itinerant food pedler”, a person, or group of
18 persons, who travel from place to place, serving,
19 keeping, exposing, storing, distributing in any manner,
20 food and/or drink.

21 *Section 305D.* The state department of public
22 health may issue a license under authority of section
23 three hundred and five A, chapter ninety-four of the
24 General Laws to any person or persons properly
25 equipped to conduct the business of catering for a
26 term of one year and may renew the same for a like
27 term. This license shall be subject to revocation for
28 cause by the department.

29 No person, or persons, shall engage, within the
30 commonwealth of Massachusetts, in the business of
31 catering without a permit from the state department
32 of public health. The annual fee for such a permit
33 shall be twenty-five dollars.

34 In case of an original application, and an applica-
35 tion for a renewal of license, the local board of health
36 shall first be requested to certify to the department,
37 that, from its inspection and examination of said
38 premises to be used for preparing and processing of
39 food to be served by said person or persons in the
40 business of catering, that said premises are suitable
41 for the purpose, and that the equipment to be used in
42 the processing, preparing, and serving of food is ade-
43 quate and suitable. They shall also certify to the
44 conditions under which food and drink are stored.
45 After due consideration of the above application, the
46 department may issue a permit to engage in the
47 business of catering.

48 No person, or persons, shall engage in the business
49 of an itinerant restaurant, without a permit from the
50 licensing authorities upon certification of the local
51 board of health in the city or town where the business
52 is being conducted and said permit shall not be granted
53 for a period exceeding thirty days, but upon applica-
54 tion, may be renewed. The fee for such permit shall
55 not exceed ten dollars.

56 No person, or persons, shall engage in the business
57 of an itinerant pedler of food without a permit from
58 the licensing authority upon a certification of the local
59 board of health in the city or town where the business
60 is being carried on. Such permit shall be granted for
61 the period of one year. The fee for such permit from
62 the local licensing authority shall be not more than
63 five dollars. The state department of public health
64 may issue, and may revoke for cause, a permit valid
65 throughout the commonwealth to a person engaged in
66 the business of itinerant pedler of food. The annual
67 fee of such a permit shall be twenty-five dollars.

68 The department of public health is hereby author-
69 ized to establish regulations setting forth minimum
70 requirements and standards for the business of cater-
71 ing, itinerant restaurant and itinerant pedlers.

72 Violation of any provision of this statute, or the
73 regulations of the state department of public health,
74 or local board of health regulations shall render permit
75 subject to revocation by the licensing authority, or
76 the state department of public health.

APPENDIX 13.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT TO FURTHER REGULATE THE LICENSING OF INN-HOLDERS AND COMMON VICTUALLERS.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 Section 2 of chapter 140 of the General Laws is
2 hereby amended by adding at the end thereof the
3 following:—

4 No such license shall be issued until approval in
5 writing is furnished to the licensing authorities by
6 the local board of health.

7 Upon recommendation of the local board of health,
8 the licensing authority after a hearing shall revoke or
9 suspend any license granted under this section to
10 innholders or common victuallers for violation of
11 health regulations pertaining thereto.

12 The state department of public health, when, as
13 a result of complaint or inspection, insanitary con-
14 ditions are suspected or known to exist, may advise
15 the local board of health, of such locations having
16 innholders' or common victuallers' licenses. The
17 local board of health shall then, for adequate cause,

18 recommend to the licensing authority that any license
19 granted under this section to innholders or common
20 victuallers be suspended or revoked, — so as to read
21 as follows:— *Section 2.* Licensing authorities may
22 grant licenses to persons to be innholders or com-
23 mon victuallers. Such license shall not be issued or
24 be valid until it has been signed by a majority of
25 the aldermen in cities where the license is to be
26 granted by the aldermen, by a majority of the licens-
27 ing board in other cities or by the selectmen in towns.
28 An alderman, any member of the licensing board or
29 a selectman may refuse to sign a license for a person
30 who, in his opinion, has not complied with this chap-
31 ter. This section shall not require the licensing au-
32 thorities to grant either of said licenses if, in their
33 opinion, the public good does not require it. A fee
34 of not more than five dollars may be charged for
35 either of said licenses. The licenses shall be recorded
36 in the office of the licensing authorities. An alder-
37 man, member of a licensing board or selectman who
38 signs a license granted contrary to this chapter shall
39 be punished by a fine of not more than fifty dollars.

40 No such license shall be issued until approval in
41 writing is furnished to the licensing authorities by
42 the local board of health.

43 Upon recommendation of the local board of health,
44 the licensing authority after a hearing shall revoke
45 or suspend any license granted under this section to
46 innholders or common victuallers for violation of
47 health regulations pertaining thereto.

48 The state department of public health, when, as a
49 result of complaint or inspection, insanitary condi-
50 tions are suspected or known to exist, may advise the

51 local board of health, of such locations having inn-
52 holders' or common victuallers' licenses. The local
53 board of health shall then, for adequate cause, rec-
54 ommend to the licensing authority that any license
55 granted under this section to innholders or common
56 victuallers be suspended or revoked.

APPENDIX 14.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT RELATIVE TO THE SALE OF POISON.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 Section 2 of chapter 270 of the General Laws, as
2 appearing in the Tercentenary Edition, is hereby
3 amended by adding, in the ninth line of the first
4 sentence, after the word "acid", the words:— any
5 such concentration as shall be determined by the board
6 of registration in pharmacy and,— so that said first
7 sentence shall read as follows:— *Section 2.* Whoever
8 sells arsenic (arsenious acid), atropia or any of its
9 salts, chloral hydrate, chloroform, cotton root or its
10 fluid extract, corrosive sublimate, cyanide of potas-
11 sium, Donovan's solution, ergot or its fluid extract,
12 Fowler's solution, oil of pennyroyal, oil of savin, oil
13 of tansy, Paris green, Parson's vermin exterminator,
14 phosphorus, prussic acid, "rough on rats," strychnia
15 or any of its salts, tartar emetic, tincture of aconite,
16 tincture of belladonna, tincture of digitalis, tincture
17 of nux vomica, tincture of veratrum viride, com-
18 pounds of fluorine, or carbolic acid, in such concen-
19 tration as shall be determined by the board of regis-

20 tration in pharmacy and without the written prescrip-
21 tion of a physician, shall affix to the bottle, box or
22 wrapper containing the article sold a label of red
23 paper upon which shall be printed in large black
24 letters the name and place of business of the vendor
25 and the words POISON and ANTIDOTE, and the
26 label shall also contain the name of an antidote, if
27 any, for the poison sold.

APPENDIX 15.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT TO FURTHER REGULATE THE LABELLING OF CHEMICAL SUBSTANCES HARMFUL TO THE HEALTH OF INDUSTRIAL WORKERS.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 SECTION 1. Section 142A of chapter 149 of the
2 General Laws, as most recently amended by chapter
3 463 of the acts of 1935, is hereby amended by inserting
4 after the word "benzol" in line 6 the words:— carbon
5 tetrachloride or other substance which, in the opinion
6 of the department, is so hazardous to health to warrant
7 regulation,— and also by inserting after the word
8 "BENZOL" in line 8 the words:— CARBON TET-
9 RACHLORIDE, or NAME OF SUBSTANCE,—
10 and also by inserting after the word "and" in line 8
11 the word:— either,— so as to read as follows:—
12 *Section 142A.* No person shall keep for sale, sell,
13 transport or store, and no person shall have for use in
14 any manufacturing, mechanical or mercantile estab-
15 lishment, benzene, represented by the chemical for-
16 mula C₆ H₆, in sections one hundred and forty-two B
17 to one hundred and forty-two F, inclusive, called

18 benzol, carbon tetrachloride or other substance which,
19 in the opinion of the department, is so hazardous to
20 health to warrant regulation, in any receptacle other
21 than part of a vehicle used exclusively for outdoor
22 transportation, unless such receptacle is marked with
23 the word "BENZOL," "CARBON TETRACHLO-
24 RIDE" or "NAME OF SUBSTANCE," and either
25 with the words "BEWARE OF POISONOUS
26 FUMES" or with the words "VOLATILE SOL-
27 VENT, POISON. USE WITH ADEQUATE VEN-
28 TILATION. AVOID PROLONGED BREATHING
29 OF VAPOR."

1 SECTION 2. Section 142 B of chapter 149 of the
2 General Laws, as most recently amended by chapter
3 463 of the acts of 1935, is hereby further amended by
4 inserting after the word "benzol" in line 5 the words:
5 — carbon tetrachloride or other substance which, in
6 the opinion of the department, is so hazardous to
7 health to warrant regulation, — and also by inserting
8 after the word "BENZOL" in line 9 and line 10 the
9 words: — CARBON TETRACHLORIDE, or NAME
10 OF SUBSTANCE, — and also by inserting after the
11 word "BENZOL" in line 12 the words: — CARBON
12 TETRACHLORIDE, or NAME OF SUBSTANCE,
13 — so as to read: — *Section 142B.* No person shall
14 keep for sale, sell, transport or store, and no person
15 shall have for use in any manufacturing, mechanical
16 or mercantile establishment any material containing
17 benzol, carbon tetrachloride or other substance which,
18 in the opinion of the department, is so hazardous to
19 health to warrant regulation, in any receptacle other
20 than part of a vehicle used exclusively for outdoor

21 transportation, unless such receptacle is marked with
22 one of the following combinations of words and
23 figures:—

24 "CONTAINS LESS THAN 20 PER CENT BEN-
25 ZOL, CARBON TETRACHLORIDE or NAME
26 OF SUBSTANCE",

27 "CONTAINS MORE THAN 15 PER CENT BEN-
28 ZOL, CARBON TETRACHLORIDE or NAME
29 OF SUBSTANCE".

30 truly indicating the proportion of benzol, carbon tet-
31 rachloride or harmful substance incorporated in the
32 mixture as last compounded, and with the words
33 "BEWARE OF POISONOUS FUMES" or with the
34 words "POISON. USE WITH ADEQUATE VEN-
35 TILATION. AVOID PROLONGED BREATH-
36 ING OF VAPOR."

1 SECTION 3. Section 142 D of chapter 149 of the
2 General Laws, inserted by chapter 304 of the acts of
3 1933 is hereby amended by removing the word "ben-
4 zol" in line 12 and inserting after the word "weight"
5 in line 12 the words:— of benzol, carbon tetrachloride
6 or harmful substance, — so as to read as follows:—
7 *Section 142D.* The commissioner may, by reasonable
8 rules or regulations, exempt from the provisions of
9 sections one hundred and forty-two A and one hun-
10 dred and forty-two B, under such restrictions as he
11 may deem advisable, (a) closed receptacles which are
12 in the possession of the manufacturer by whom the
13 contents of such receptacles were made or compounded
14 or of a common carrier, provided in each case that he
15 is satisfied that such contents are to be used only
16 outside the commonwealth; (b) receptacles contain-

17 ing material used exclusively as motor fuel; (c)
18 receptacles containing material which, as last com-
19 pounded, contained less than one per cent by weight
20 of benzol, carbon tetrachloride or harmful substance.

1 SECTION 4. Section 142 E of chapter 149 of the
2 General Laws, inserted by chapter 304 of the acts of
3 1933, is hereby amended by inserting after the word
4 "benzol" in lines 3, 4 and 6 the words:— carbon
5 tetrachloride or other substance which, in the opinion
6 of the department, is so hazardous to health to war-
7 rant regulation, — so as to read as follows:— *Section*
8 *142E*. The commissioner shall, by reasonable rules
9 or regulations, require such reports of the manu-
10 facture, sale, receipt, possession or use of benzol,
11 carbon tetrachloride or other substance which, in the
12 opinion of the department, is so hazardous to health
13 to warrant regulation, or of materials containing
14 benzol, carbon tetrachloride or other substance which,
15 in the opinion of the department, is so hazardous to
16 health to warrant regulation, as he may deem ad-
17 visable for the protection of persons exposed to
18 possible injury by such benzol, carbon tetrachloride
19 or other substance which, in the opinion of the de-
20 partment, is so hazardous to health to warrant regu-
21 lation or materials containing benzol, carbon tetra-
22 chloride or other substance which, in the opinion of
23 the department, is so hazardous to health to warrant
24 regulation.

1 SECTION 5. Section 142 D of Chapter 149 of the
2 General Laws, inserted by chapter 304 of the acts of
3 1933 is hereby amended by inserting after the word
4 "benzol" in lines 7 and 8 the words:— carbon tetra-

5 chloride or other substance which, in the opinion of
6 the department, is so hazardous to health to warrant
7 regulation, — so as to read as follows:— *Section 142F.*
8 Whoever violates any provision of section one hundred
9 and forty-two A, one hundred and forty-two B or one
10 hundred and forty-two C, or any rule or regulation
11 made under section one hundred and forty-two C,
12 one hundred and forty-two D or one hundred and
13 forty-two E, and whoever, being charged with the
14 duty of marking any receptacle containing benzol,
15 carbon tetrachloride or other substance which, in
16 the opinion of the department, is so hazardous to
17 health to warrant regulation, or any material in which
18 benzol, carbon tetrachloride or other substance which,
19 in the opinion of the department, is so hazardous to
20 health to warrant regulation, is included, fails so to
21 mark the same, and whoever wilfully removes or
22 defaces any mark made in accordance with any of
23 said provisions or rules or regulations, shall be punished
24 by a fine of not more than one hundred dollars.

APPENDIX 16.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT RELATIVE TO THE SERVICE OF ORDERS FOR
ABATEMENT OF NUISANCES.

*Be it enacted by the Senate and House of Representatives
in General Court assembled, and by the authority of the
same, as follows:*

1 Section 124 of chapter 111 of the General Laws,
2 Tercentenary Edition, is hereby amended by striking
3 out the first sentence, and inserting in place thereof
4 the following sentence:— Such order shall be in writ-
5 ing, and may be served personally on the owner,
6 occupant, or his authorized agent by any person au-
7 thorized to serve civil processes; or a copy of the order
8 may be left at the last and usual place of abode of the
9 owner, occupant, or agent, if he is known and within
10 the commonwealth; or a copy of the order may be sent
11 to the owner, occupant, or agent, by registered mail,
12 return receipt requested, if he is known and within the
13 commonwealth, — so as to read as follows: — *Section*
14 *124.* Such order shall be in writing, and may be
15 served personally on the owner, occupant, or his au-
16 thorized agent by any person authorized to serve
17 civil processes; or a copy of the order may be left at
18 the last and usual place of abode of the owner, oc-

19 cupant, or agent, if he is known and within the com-
20 monwealth; or a copy of the order may be sent to
21 the owner, occupant, or agent, by registered mail
22 return receipt requested, if he is known and within
23 the commonwealth.

24 If the premises are unoccupied and the residence
25 of the owner or agent is unknown or is without the
26 commonwealth, the board may order the notice to be
27 served by posting it on the premises and by advertising
28 it in one or more newspapers.

APPENDIX 17.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

**AN ACT AUTHORIZING THE DEPARTMENT OF PUBLIC HEALTH
TO ADOPT A SANITARY CODE.**

*Be it enacted by the Senate and House of Representatives
in General Court assembled, and by the authority of the
same, as follows:*

1 Section 5 of chapter 111 of the General Laws, as
2 appearing in the Tercentenary Edition, is hereby
3 amended by adding at the end the following new
4 paragraph:—

5 The department of public health shall have the
6 power after hearing to establish and from time to time
7 amend and repeal sanitary regulations provided such
8 regulations shall not be inconsistent with public health
9 laws as enacted by the General Court. The regulations
10 so established shall be called the sanitary code. The
11 sanitary code may deal with any matters affecting the
12 security of life and health and preservation and im-
13 provement of the public health in the commonwealth,
14 and with any matters as to which jurisdiction is here-
15 after conferred upon the department. Every regula-
16 tion so adopted by the department shall state the date
17 upon which it takes effect, and a copy thereof duly
18 signed by the commissioner and public health council

19 shall be filed as a public record in the office of the
20 secretary of state and in the office of the state de-
21 partment of public health. A copy thereof shall be
22 sent by the commissioner of public health to each city
23 and town board of health within the state, and shall
24 be published in such manner as the department may
25 from time to time determine. The commissioner of
26 public health or his deputy shall furnish certified
27 copies of such code and its amendments for a fee
28 of one dollar and such certified copies shall be received
29 in evidence in all courts or other judicial proceedings
30 in the commonwealth. The provisions of the sanitary
31 code shall have the force and effect of law and any
32 violation of any provisions thereof shall be punished
33 by a fine of not more than fifty dollars or by imprison-
34 ment for a period not exceeding six months, or both.

APPENDIX 18.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

**AN ACT FURTHER PROVIDING FOR THE CARE OF INFANTS
PREMATURELY BORN.**

*Be it enacted by the Senate and House of Representatives
in General Court assembled, and by the authority of the
same, as follows:*

1 **SECTION 1.** Chapter 111 of the General Laws is
2 hereby amended by striking out section 67A, inserted
3 by chapter 332 of the acts of 1937, and inserting in
4 place thereof the following:—

5 *Section 67A.* If an infant is born prematurely in
6 a place other than a hospital equipped to care for
7 prematurely born infants and weighs five and one
8 half pounds or less at birth, the physician having
9 charge of the birth of such infant shall forthwith give
10 notification thereof to the board of health and the
11 board of public welfare of the town wherein the in-
12 fant was born, stating the name of the mother of such
13 infant and the street address where the infant is at
14 the time of such notification. Such notification shall
15 be given as soon as is practicable after such birth
16 occurs, by telephone if possible, and in addition
17 thereto such physician shall, within twenty-four hours
18 after such birth, file a written report with such board

19 of health in such form and giving such information
20 as such board shall prescribe. In the case of such an
21 infant prematurely born in a hospital equipped to care
22 for prematurely born infants, the superintendent or
23 other person in charge of such hospital shall forth-
24 with file with the board of public welfare of the town
25 wherein the infant was born a written report in the
26 form and giving the information required by the
27 board of health hereunder as to premature births
28 reported to said board. The board of health in the
29 town in which the birth occurs shall notify in writing
30 within three days the board of health of the town in
31 which the infant's parents reside.

32 *Section 67B.* Upon the written request of either
33 parent of such infant and of the attending physician,
34 such board of health or its duly authorized represen-
35 tative, upon receiving the notification referred to in
36 the preceding section, shall forthwith provide for the
37 transportation of such infant to a hospital equipped
38 to care for prematurely born infants, unless other
39 provision for such transportation shall have been
40 made.

1 SECTION 2. Said chapter 111 is hereby further
2 amended by striking out section 67C, inserted by
3 said chapter 332 of the acts of 1937, and inserting in
4 place thereof the following:—

5 *Section 67C.* Reasonable expenses for the care of
6 a prematurely born infant, weighing five pounds or
7 less at birth, in a hospital in which it is born or to
8 which it has been removed shall be paid by the parent
9 or guardian, or any other person bound by law to
10 maintain such infant, if he is able to pay, otherwise
11 by the board of public welfare of the town wherein

12 such infant was born, subject to the provisions of
13 section twenty-four of chapter one hundred and
14 seventeen relative to native and request and sub-
15 ject to reimbursement as hereinafter provided. If
16 such infant has a legal settlement within the com-
17 monwealth, the town of settlement shall reimburse
18 the town where such infant was born in like manner
19 as if the expense of such care had been incurred under
20 section fourteen of chapter one hundred and seven-
21 teen. If the infant has no legal settlement in the
22 commonwealth, the town wherein such infant was
23 born shall be reimbursed by the commonwealth for
24 the expense of the care of such infant, within the
25 limits as to amount prescribed by section eighteen of
26 chapter one hundred and twenty-two, upon notice to
27 the department of public welfare by the board of
28 public welfare of such town that said board has in-
29 curred such expense; provided, that reimbursement
30 shall not be made for any expense incurred more than
31 five days prior to such notice.

32 *Section 67D.* Sums paid by any town as provided
33 in the two preceding sections shall not be deemed to
34 have been paid as public relief, and no person shall
35 be deemed to be in receipt of public relief because of
36 his inability to pay such sums, but while such care
37 is being given, such parent or person shall not ac-
38 quire or lose or be in the process of acquiring or losing
39 a settlement; provided, that the provisions of this
40 section relative to settlement shall not apply to a
41 guardian who is not a parent of such infant or a
42 person bound by law to maintain him.

APPENDIX 19.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

AN ACT PROHIBITING THE EMPLOYMENT IN SCHOOLS OF PERSONS SUFFERING FROM TUBERCULOSIS IN A COMMUNICABLE FORM, AND PROVIDING FOR PERIODIC EXAMINATIONS OF SCHOOL EMPLOYEES.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 SECTION 1. Chapter 71 of the General Laws is
2 hereby amended by inserting after section 55A the
3 following new section:—

4 *Section 55B.* No person suffering from tuber-
5 culosis in a communicable form shall be employed
6 or continued in employment at any school in the
7 commonwealth, including any college or university,
8 in any capacity which might bring him into direct
9 contact with any student at such school. Immedi-
10 ately prior to his entering into any such employment,
11 and at least every three years during the course of his
12 employment thereafter, each school superintendent,
13 principal, director, teacher, food handler, janitor,
14 bus driver, nurse, doctor or other person whose duties
15 bring him into such direct contact, shall file with the
16 superintendent, school committee, officers or other

17 persons having charge of such school, on forms fur-
18 nished by the department of public health and ap-
19 proved by the department of education, a report,
20 accompanied by an X-ray of his chest, made by a
21 registered physician, relative to his freedom from,
22 susceptibility to, or condition of tuberculosis, and such
23 report shall be kept as a part of the records of such
24 school authorities. Such report shall be based on an
25 X-ray of such person's chest taken not more than
26 sixty days prior thereto, and upon such laboratory
27 tests and clinical examination as may be necessary to
28 establish a diagnosis of tuberculosis. All X-ray films
29 so filed shall be submitted for review to the department
30 of public health or to the county or municipal tuber-
31 culosis sanatorium of the district or municipality in
32 which such school is located, and where the X-ray so
33 submitted is for any reason not satisfactory, an X-ray
34 of the employee's chest shall be made by said depart-
35 ment or such sanatorium. When such X-ray shows a
36 pulmonary lesion which cannot be properly evaluated
37 on a single film, further X-ray examinations shall be
38 made, at such intervals as it may require, and with-
39 out charge, by said department or such sanatorium.
40 Such reports and X-rays shall be required at least
41 every three years from all school employees other than
42 substitute teachers or employees who do not work
43 more than thirty calendar days in any school year;
44 provided, that such re-examination shall not be re-
45 quired within three years of any previous examination
46 for any school employee who may transfer within the
47 commonwealth. Any teacher or other employee ex-
48 cluded or removed from employment on account of
49 active tuberculosis shall be carried on sick leave for
50 such period as he may be entitled to under the regu-

51 lations of the school committee or other school officers,
52 and shall thereafter be carried on leave without salary
53 until properly certified by the department of public
54 health, or such county or municipal sanatorium, on the
55 basis of X-ray and laboratory examinations, as free
56 from tuberculosis in a communicable form.

1 SECTION 2. Prior to September first, nineteen
2 hundred and forty-nine, all persons coming within
3 the purview of section one of this act shall file with the
4 school authorities a report and X-ray as prescribed in
5 said section one.

1 SECTION 3. This act shall take effect prior to Sep-
2 tember first, nineteen hundred and forty-nine.

APPENDIX 20.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Forty-Nine.

**AN ACT FURTHER REGULATING PHYSICAL EXAMINATIONS
OF SCHOOL CHILDREN.**

*Be it enacted by the Senate and House of Representatives
in General Court assembled, and by the authority of the
same, as follows:*

1 **SECTION 1.** Chapter 71 of the General Laws is
2 hereby amended by striking out section 57, as ap-
3 pearing in chapter 304 of the acts of 1943, and in-
4 serting in place thereof the following section:—

5 *Section 57.* The committee, or the board of health
6 in those municipalities where school health services
7 are the responsibility of the board of health, shall
8 cause every child in the public schools to be separately
9 and carefully examined in such manner and at such
10 intervals, including original entry, as may be deter-
11 mined by the department of public health after
12 consultation with the department of education and
13 the medical profession, to ascertain defects in sight
14 or hearing, and other physical defects tending to
15 prevent his receiving the full benefit of his school
16 work, or requiring a modification of the same in
17 order to prevent injury to the child or to secure the
18 best educational results, and to ascertain defects of

19 the feet which might unfavorably influence the child's
20 health or physical efficiency, or both, during child-
21 hood, adolescence and adult years, and shall require
22 a physical record of each child to be kept in such
23 form as the department may prescribe. The tests
24 of sight and hearing shall be made by the teachers,
25 directions for which shall be prescribed by the de-
26 partment of public health.

1 SECTION 2. This act shall take effect September
2 first, nineteen hundred and forty-nine.

